

THE LAND LAWS AMENDMENT ACT (1929)
AND THE PUMICE LANDS OF THE VOLCANIC PLATEAU:
ANTECEDENTS AND CONSEQUENCES

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by

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THE LAND LAWS AMENDMENT ACT (1929) AND
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CHAPTER ONE: INTRODUCTION

"Axiomatic in historical geography is the notion that in studying the process of settlement the physical environment per se warrants less attention than the environment as perceived and imagined by contemporaries attempting to evaluate it in their own terms" ¹. As the pumice lands of the Volcanic Plateau were largely by passed by the main stream of New Zealand settlement leaving it to the State belatedly to execute such development the scope for this study is realised. Recognising also that the Land Laws Amendment Act of 1929 was the means whereby such farm settlement was initially instigated it can be seen that "without attention to the political, our geographical insights are likely to be limited and sterile" ². Examinations could be made of other similarly by passed arear where the State has played the major part in land development and settlement thus giving this study wider implications

"Decision makers operating in an environment base their decisions on the environment as they perceive it, not as it is. The action resulting from decision on the other hand is played out in a real environment" ³. Brookfield thus helps to unite the two strands outlined above and provides this thesis with its twin aims; firstly to describe and if possible account for the sequence of attitudes to and appraisals of the pumice lands

of the Volcanic Plateau up to 1930; secondly to describe the resultant reappraisal, selection, development and settlement of certain areas within those lands under the provisions of the Land Laws Amendment Act of 1929.

For the purposes of that Act "roughly all of the pumice lands" ^{4.} of the Volcanic Plateau consisting of the counties of Rotorua, Taupo within the South Auckland District, Whakatane and Wairoa north and west of the Kaimai Road and Matamata south of a line along the Rotorua to Putaruru railway extended to Arapuni. Whilst not intending to deal with the whole in this thesis its core area has been selected including those lands over which the question of apporestation of farm development was most acute. Excluded from consideration are those areas north of a line from Te Mahoe skirting south and west of Te Teko to and along the thirty ninth parallel as well as those areas east of a line from Te Mahoe along the Rangitaiki River skirting the eastern edge of the Galatea settlement and thence down the Wheao and Waipunga rivers to the southern boundary of the Auckland land District.

Nineteen twenty nine provides an arbitrary yet convenient date to terminate this study. Symptomatic of a change which began in 1932 - 33 the Strathmore estate, bought in 1940, was handed over for development to the Small Farms Board rather than the Land Development Board (as established in 1929) Also 1939 marks the year in which the Agriculture Department published the results of experiments and research which showed that the

trace element cobalt effectively eliminated bush sickness. In addition it marks a lull in development following the beginning of war, a lull which was the prelude to accelerated development after 1946 to meet the demands of Soldier Rehabilitation. Although not fully settled until 1952 sufficient progress had been made at Galatea by 1939 to adequately supplement that obtained from the Onepu and Ngakuru settlements.

Separate from the physical environment of the Volcanic Plateau's pumice lands is the perceived environment of those lands based on relevant, subjective, flows of information. These flows directed on the legislature, or more correctly the Government, of the day may be said to consist of two not wholly independent strands. The first official appraisal, consists of the body of opinion on and knowledge of the resources of those pumice lands held within relevant bureaucratic and other politically constituted bodies (Royal Commissions, Select Committees) as well as Parliament and Political parties. The second consists of the like body of knowledge held by individuals or bodies outside the official realm who may yet have influenced that realm, as well as the decision makers, by direct or indirect contact. This is popular or individual appraisal. All appraisals are liable to radical or less spectacular revision by an increase in technological or scientific knowledge which may revise the means available to meet the peculiarities of a particular environment and these may be from either internal or external sources. External or

internal conditions may change the nature and pressure of demands made on a particular environment and thus cause a revaluation of its resources to meet that need. In addition all appraisals are conditioned by the means available at a particular time as well as the degree of familiarity with the area under discussion. It is on this mental image of the resources of an area selected from the inputs which they receive that the decision makers work to fashion legislation or to execute policy decisions instituting action deemed desirable.

Once implemented the decision brings forth results which act as new surges of energy, new knowledge, into the flow of information. It is against this new modified perceived environment that given the needs and the means available to fulfil them at the time, revised or new decisions are made. The process is then one of an endless chain of interconnected links.

This approach offers then a more satisfactory alternative to one which views the physical setting simply from a mid twentieth century stand point largely out of touch with a discussion of a prior period. Likewise the historical background becomes not just a preamble but an important and integral part of the whole. This is an attempt to follow a number of links in the chain ending with a focus on one particular, most important, link that of the era from 1930 - 39. Thus the thesis is of the form.

CHAPTER TWO: THE INITIAL PERCEIVED ENVIRONMENT AND SETTLEMENT

TO 1913

This chapter deals with the period in which knowledge of the pumice lands of the Volcanic Plateau was slowly and sometimes painfully accumulated by the European. It was a period of exploration both official and independent to build up a store of knowledge against which to access the agricultural and afforestation potential of those lands.

CHAPTER THREE: PROCESS AND PATTERNS OF SETTLEMENT 1914 - 1929

A changed situation led to a reappraisal of agricultural and afforestation potential based on the initial perceived environment. Settlement of the Reporog estate, other soldier settlement and private development as well as state and private afforestation were a prelude to a second reappraisal in the latter part of the 1920's.

CHAPTER FOUR: APPRAISAL, SELECTION, DEVELOPMENT SETTLEMENT

1930 - 1939

This chapter focuses on the working out of the provisions of the Land Laws Amendment Act of 1929 on the pumice lands of the Volcanic Plateau. It is an attempt to relate the perceived and real environments as development and settlement progress at Onepu, Ngakuru and Galatea.

CHAPTER FIVE: CONCLUSION

SOURCES

Travellers accounts provide fragmentary coverage varying in content and accuracy with the intent and training of the author while similar criticism can be made of other studies

concentrating on the pumice lands of the Volcanic Plateau. Nonetheless they are valuable sources providing in the former case sometimes the only readily available material. Despite their often promotional aspects the prospectuses of afforestation companies and other associations are another valuable source. It is not only the reality on which the perceived environment is based but also the illusion, the deceptive and even the wrong idea whose influence can be paramount at least for a time. Newspapers too can be promotional with regard to the area being considered and have proved a difficult source for this study. Only one truly local paper has been studied in detail, "The Putaruru Press", as both the "Waikato Agus" and "Bay of Plenty Times" had foci outside the pumice lands while the back copies of the "Rotorua Chronicle" have been destroyed. Other newspapers, including the "New Zealand Herald", "Auckland Weekly News" and many more have been studied in so far as clippings in Departmental records would allow.

Settlers statements in the form of diaries have proved the least prolific of sources yet represent the reaction of persons to whom the quantities of the environment were of immediate concern. However in that amorphous mass which at times constitutes a departmental file as well as in evidence to Royal Commissions, Select Committees and the like contained within the Appendices to the Journals of the House of Representatives (A.J.H.R.) and verbal contact this form of

evidence has been adequately tapped. This type of evidence does however suffer from localisation to a large extent in that it is focussed on a core area of if not daily knowledge at least one of personal experience often not extending over the whole of the area of the Volcanic Plateau.

In addition to that evidence already mentioned the A.J.H.R. contains the annual reports of the Government Departments and the conclusions and recommendations of Royal Commissions and Select committees. These constitute a source almost unparalleled anywhere else in this respect. Departmental records, while being amorphous, often fragmentary and at times difficult to use (because the relevant number or the title under which certain material is unknown) provide the bulk of the material for this thesis. Some relevant files have also been destroyed thus adding to the difficulties. Hansard provides a similar wealth of material which is often fragmentary as relevant passages are spread far and wide in each volume. This source has been relied on heavily for the decision making side, in which debate and legislation as well as questions to ministers play a large part. The New Zealand Gazette completes this type of source. Containing valuable details on the capital value, rental value, size and location of each property opened for selection in addition to a general description of the land, any special tenure conditions and forfeitures of leases it is a valuable source. It does not however provide the date of settlement nor the settler who took up the particular property.

Reliance has been placed on Valuation records to give a picture of the overall settlement prouss. The New Zealand Gazette in providing rental values in conjunction with valuation figures from either Valuation or other Department records has opened the way for these to be used to help illuminate the perception of the area.

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CHAPTER TWO: THE INITIAL PERCEIVED ENVIRONMENT AND
SETTLEMENT TO 1913

MAORI SETTLEMENT

Food, water, soil, defence and shelter, these considerations dominated the pre-European perception of the pumice lands of the Volcanic Plateau. In addition, well used paths linking settlements both within the area as well as to those in the Waikato, Bay of Plenty, East Coast and Wanganui point to a wider perception of pumice land resources.

Settlement concentrated on the shores of the Rotorua lakes with additional locations fringing the bush to the north of Lake Taupo, in the Horohoro and Rotorua areas. "The lake of Rotorua, like that of Taupo, contains eels and another species of fish of a small size; also a bivalve shellfish called kakaki; all of these serve the natives as food." ^{1.} Thus Diefenback notes a predominant aspect for Maori settlement location which is further endorsed by Smith who states that the Taupo ducks were "larger than the common English variety" ^{2.} whilst Lake Rotomahana "must be a very paradise for ducks which breed in immense numbers in its tepid waters" ^{3.} The latter also notes that the Maori consciously sought to conserve this source of food by limiting the hunting season. Bidwell likewise saw on the Waikato river near Atiamuri "a temporary encampment of natives believed to be of the great Waikato tribes who had come there for the purpose of catching crawfish, shellfish etc, snaring ducks and shags which were very abundant" ^{4.} pointing to a perception of the districts resources

beyond its bounds.

Operating a system of shifting cultivation whereby a patch of bush was cleared and planted in kumera before being abandoned, exhausted, after three years meant that soil considerations were very important to the Maori. The tendency was to concentrate on the alluvial fans where the rivers entered the lakes or on other arears of rich soil notably Mt Tauhara near Taupo. Along with this the importance of fern root as a staple in the Maori diet, the presence of timber for shelter, defence and other purposes, enhanced the popularity of the bush fringes. The presence of geothermal pools as a source of natural heat for cooking and as an acid in defence provided an impetus to settle as close as possible to if not above them, where they were available.

Defensive considerations were of paramount importance to the pre-European and sites such as at "Pirata, a pa situated ... on top of some perpendicular cliffs rising from a small stream" ⁵. or another "on a conical hill of basaltic lava which projects into the lake (Rotoiti)" ⁶. Mokoia Island served, until the time of Hongi Heke, as the haven of the Rotorua Maoris too which they could retreat with their canoes in time of war.

The pre-European avoided the spin tussock plains of the Kaingaroa and Patetere where, wood, soil fit for cultivation plus water, to a lesser extent were excessively scarce.

EARLY EUROPEAN SETTLEMENT

Into this land after the mid 1820's came the European. In the vanguard were two groups whose perceptions of the area were

largely conflicting. The first, the trader, sought to obtain flax, which grew abundantly within the area in exchange for muskets or other trade items. Two traders sought to establish posts on Mokoia Island to facilitate these operations. Tapsell, from Maketu on the Bay of Plenty, managed to retrieve his emissary and goods at the eleventh hour; those from Tauranga were less fortunate. Cabbage, one of the traders sent to man the post was killed and quartered for the pot whilst his two companions fortuitously escaped a similar fate.

The second group, the Missionary seeking to convert, educate and civilize the Maori came in the early 1830's. 1835 saw the establishment of a C.M.S. Mission station at Te Koutu on the shores of Lake Rotorua. Hewn from the bush "an orchard was planted with apples, peach, pear quince, apricot, nectarine, mulberry, walnut and cherry - an acre and a half in extent. About an acre and a half of clover and ryegrass were also laid down and the whole fenced with split fencing" ⁷. Shortlived this station was sacked by hostile natives within a year, forcing the Chapmans to flee to Tauranga. Within five years a second, more successful attempt was made when, in 1839, a station was established at Te Ngae. A Mill was established on this site and the natives taught to sow European grain crops notably wheat; this station was followed by another at Tarawera in 1845. Although Spencer seems to have had ideas of sending native grown flour to Auckland the agricultural efforts of this group were largely bent on education using these farms as models running a few stock and growing a few crops.

Prior to 1870 then the pumice lands of the Volcanic Plateau were an almost unknown Maori territory. However during the sixties many soldiers passed through and fought over while writers who had visited the area commented on its tourist attractions. European agricultural settlement was hindered by the inaccessibility of the inland situation position in addition to the hostility of the Maori south of the confiscated lands of the Bay of Plenty. An 'autaki' or imaginary barrier line had been drawn accross the country rendering travelling in some districts extremely dangerous with the possibility of heavy stock losses for some considerable time after 1872.

Despite these difficulties some like Smith in 1858 considered that the Kaingaroa "would make, I should think, good cattle or sheep runs it being all grassed from here to Taupo and well watered" ⁸. were drawn to the district. Thus attracted in 1867 were southern sheepfarmers, notably Mr Alfred Cox, well known in Canterbury who depastured sheep near the upper reaches of the Rangitaiki. Further on near Opepe a Marlborough settler Mr Tetley, also established a homestead. In fact both of these settlers passed on within twelve months with considerably depleted flocks whose remnants were removed to the coast of the Bay of Plenty where, still, the mortality continued. Major St George was another who, until he fell a victim of the Hau Hau revolt, ran sheep on native lease in the area.

About 1869 Hutton Troutbeck bought the 30,000 acre Galatea station from the Maoris. Although a little reduced when J. Grant, long time manager of the property bought a part, both these farms

Plate One.

Kaingaroa Plateau " would make I should think a
good cattle or sheep runs it being all grassed from
here to Taupo" (S.P. Smith: An 1858 Journey into the
Interior)

(N.Z. Forest Service).

(I wish to express my sincere appreciation to Mr W.T.
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developing the photographs for this thesis)



continued successfully until in the case of the Galatea station it was bought in 1932 by the Government. As well as cattle and horses some eight thousand sheep were run annually with the Troutbeck property being noted for its stock quality. Known throughout its life as a station as "the experiment" reliance was placed on an extensive drained swamp incorporated in the property which enabled the "bush sickness" problem to be overcome.

During the next decade pack horses tracks succeeded by coach roads were pushed through the pumice lands, at least partly to assist in pacification. Using armed constabulary posts as convenient staging points Rotorua was linked to the Bay of Plenty with additional connections to Taupo and Napier following. By 1877 the "old coach road" connecting Taupo to Cambridge had been completed providing improved communications which in turn encouraged an increase in tourist traffic and land speculation in addition to some settlement.

In 1873 the first farm other than the Te Ngāe Mission Farm begun by J Mc Kenzie is said to have been started in the following manner. McKenzie, so the story goes, was at the lake House Hotel when the Commandant of the local Armed Constabulary forces sought a nightcap of whiskey and milk. On being informed that the latter commodity was unavailable he invited anyone present to take up a piece of land to produce to requisite item. McKenzie took up the offer, hiring a horse and gig and the following morning set out to inspect land confiscated from the

Rotorua Maori as a reprisal for their part in aiding Te Kooti. Settling on the area now known as Northdale farm, on the outskirts of Ngongotaha, McKenzie with the sealing of a gentlemen's agreement with the minister, set to work to develop a farm. With his wife's aid they built ditch and bank fences, drained the main swamp which stocked by cows led from Tauranga and Cambridge entered production to serve Ohinemutu. Other early farmers included Henry Kirk who, like McKenzie was still farming the Te Ngae Mission into the twentieth century, whilst the Honorable William Kelly was another early settler.

The Taupo - Napier road became the scene of expansion when some time prior to 1877 Lane and Carswell took up the Loch Inver station, a 75,000 acre native lease to the south of the road. In 1877 the station, reduced in size to 35,000 acres passed to McDonald and Munroe, the former of whom remained there until the 1890's. To the west speculation became the keynote with large areas including 56,000 acres held by the Maraetai Land Development Company in the Maraetai - Tokoroa blocks as well as lesser areas in the Waotu block.

SETTLEMENT FROM 1881

1881 saw the passing of the "Thermal Springs Districts Act" through Parliament; an act whose subtitle was "An act to provide for the settlement of the thermal springs districts of the colony" Designated subject to the provisions of this

act were some 646,000 acres spread through the counties of Tauranga, Rotorua and East Taupo but concentrating around the Rotorua lakes with a subsidiary area at Wairakei. In settling these native lands it became unlawful for any person other than Her Majesty to acquire any estate or interest in the native land therein except that after the lands had passed through the Native Land Court the Governor could arrange with the proprietors for rendering the lands available to the European. In this way the Governor became the agent of the natives in all dealings regarding the lease, cession or alienation of the natives land. This inability to deal with the Maori direct virtually stultified the settlement of those designations until 1911 apart from those opened by the Crown.

In the latter part of the 1870's the Thames Valley Land Company bought 163,000 acres straddling the western boundary of the pumice lands of the Volcanic Plateau. Stretching from Okoroire toward Atiamuri on the Waikato and to the Mamakus some 50,000 acres including the headquarters - the Club run near Lichfield - are incorporated in the area under consideration. Adopting the economical plan of ploughing up and sowing down with clover detached ten acre sections in various parts of the estate the stock were left to spread it over the remainder. In all some 3,000 acres had been sown, carrying 1600 cattle and 1400 sheep, by 1886 when the railway from Morrinsville to Lichfield had been completed. In that year also the company invited a number of well known property holders to visit, along with Bank

Managers, Land and Stock agents and the Press. The occasion marked also the first livestock sale in the district when 220 steers and heifers, all in good condition were sold for prices above those than current on the Auckland market.

By this time it already appears that the district was acquiring the reputation as a poor quality area. In spite of comments including "no one with the time interest of the colony at heart but must regret that so fine a stretch of farming country should be almost unoccupied" ⁹. of that the country "was admirably adapted for settlement and that when the fitting time arrives it will support a large and contented population" ¹⁰ others including the Wellington Evening Post saw things differently. Speaking of the purchase of the area now contained in Rotorua township it stated, "the land acquired is simply a mass of pumice stone of no value whatever except on account of the scenery and volcanic springs which abound" or more simply "the land is not of the slightest use" ¹¹

Additional settlement, which like Loch Inver is largely peripheral to the selected area, but yet added to its early perception, came when Grace took up Taharua station in 1884. Again this area was south of the Taupo -Napier road, but unlike its neighbour, this effort lasted a solitary year. Isolation helped to make this effort stillborn as the alternatives Napier, Tauranga or the uncompleted Lichfield line were the only points through which products and imports could be sent or bought.

FARMING, FORESTRY AND BUSH SICKNESS

It was not until the final decade of the nineteenth century that the Crown began to open blocks of the pumice lands for selection other than those of the Rotorua township. The main stimulus for this development was undoubtedly the completion of the Putaruru to Rotorua railway in 1894. As Bidwell had noted in 1839 official perception of the region under consideration held the view that "the bushlands are undoubtedly the best lands" ¹² Without exception however the lands within the region were designated either second or third class in quality. With the exception of some blocks close to Taupo where other considerations were to the fore both the valuations per acre as well as the size of the holdings substantiate the differentiation in view between those lands covered with light to heavy mixed forest at one end of the spectrum to those covered with rough tussock at the other. Rotorua bushlands ranging in value from ten shillings to one pound fifteen per acre were available predominantly in two hundred acre allotments although ranging from eighty eight to over four thousand acres in size. In contrast the six pastoral runs opened for selection on the Kaingaroa plains ranged from seventeen thousand four hundred and thirteen acres to fifty six thousand five hundred and six acres in size, with valuations of seven and six to five shillings an acre. Other factors which may be included in the assessment of these two factors are distance from transport foci, availability of water in addition to the quality of the soil.

Plate Two

Rimu, Totara and Matai with an understory of
hardwood, Tawa, Rewarewa, Hinau etc.

Te Whaiti, Rotorua.

"If the land could grow such huge trees
it would grow anything" (R.H. Martin
per comm.).

(Forest Service)



For instance those runs situated between Rotorua and Kaingaroa were notably smaller in size ranging from six to eleven thousand acres although the valuations were similar to Kaingaroa.

The first selections available either boarded the Rotorua railway line between the stations of Arahiwi and Ngongotaha (all within the confiscated lands) or on the Kaingaroa plan. As the feeder roads developed so further areas were declared open in succeeding years from 1893. Demand appears to have been hesitant as sections in the Rotorua area remained open for up to five years with only one Kaingaroa run being taken up. Descriptions noting the mixed forest of tawa, rimu and other native trees attracted not only settlers but also milling interests as well. Settlers such as R.W. Martin, used to farming the heavy kauri country of Northland, or more dominantly Watkins envisaging a new Taranaki felt that if the land could grow such huge trees it could grow anything took up the land. Stewart noted in 1891 "the soil (of the Rotorua district) takes grass and holds it well "¹³ so that this too, although not noted in official descriptions probably had an influence also. A number of sawmills became established including those of the Waihi Gold Mining Company, Rowes, Steel Brothers, Parker and Lamb, Gammon and McKenzie

Plate Three

Bush Sick Animal - the spectre that was to
dog the pumice lands of the Volcanic Plateau
for more than three decades

(Agriculture Dept. Photograph
thanks to C.H. Taylor Rotorua).

Plate Four

The alternative - larch forest at Waiotapu
(N.Z. Forest Service).



Writing in 1896 Mueller (Commissioner of Crown Lands, Auckland) stated "while on the subject of the waste lands I would like to mention the advisability of commencing to plant the large areas of open pumice lands held by the Crown"¹⁴

The following year in the Department of Agriculture's annual report is stated "over a small extent of the wooded country between the Waikato and Tauranga a percentage of cattle kept on the clearings became affected with what is locally called "bush sickness" recovering when removed"¹⁵ Thus enter two strands which were to play an extremely important part in the perception of the pumice lands of the Volcanic Plateau.

Three plantations of five acres each, later extended, were enclosed along the Galatea road on the Kaingaroa plain with additional acreages at Tarukenga and Mamaku were planted with various trees in 1897. In that year also some thirty five species of grass and fodder plants were sown on the Kaingaroa plain. Designed respectively to test the capabilities of this large pumice area for the growth of timber it being well known that the native forests grow well on this class of soil while in former times much of the land that is now growing nothing but fern and tussock grass was under forest and to test the growth of grass and fodder plants on this barren pumice land,

In the report of 1902 it states "all coniferous trees sufficiently hardy to withstand the rigorous climate have succeeded beyond expectation, and it is a matter for consideration whether extensive plantations should not be started here

in the near future" ¹⁶ It should be noted that there were already two embryonic state plantations on the pumice lands by that date these being at Whakarewarewa (where there was also a nursery) and at Waiotapu, totalling two hundred and sixty five acres planted. Of the grassing experiments the report notes that "although no very satisfactory results were anticipated at the time of sowing - owing to the extremely poor and very light nature of the soil and the rather high elevation (2,500 feet) - the results of four and a half years experiment goes to prove that no grasses or other plants at present in cultivation in this colony will succeed here" ¹⁷ Severe frosts played an important part in the failure of these experiments through the porous nature of the soil allowing the frost to penetrate beneath the roots of the plant following heavy rain lifting the soil by expansion which with the contraction following rising temperatures leaves the plants either on the surface or raised above their natural level.

Along with Pond and Maclaurin the report notes the presence along road sides, horse tracks or the edges of the swampy portions of the plain patches of imported grasses and clovers growing luxuriously. Both Pond and Maclaurin and Mathews attributed this to the compaction of the soil but whilst admitting the difficulty of carrying fodder and manure to the district the former disagreed with the conclusion that "to consolidate any extent of these plains by means of tramping with stock is practically impossible as there is no available food to sustain

them" ¹⁸ Noting the condition of the large herds of wild horses roaming the area they stated that "the capillarity of the soil is excellent and providing due consolidation is obtained there should be no reason other than a climatic one why the plants should not produce a large quantity of feed" ¹⁹ The Agriculture Department appears also to have taken on interest in the grassing experiments noting that "none (of the grasses) now remain but chewing fescue and some agrotis vulgaris which at the homestead of the Thames Valley land Company farms good pasture". The Danthonia semiannularis also adapts itself to the poor pumice lands being being seen around Rotorua and in the armed constabulary paddock at Taupo. As these two grasses promise to be of the greatest assistance every attention is earnestly directed to them" ²⁰

The symptoms of bush sickness in both sheep and cattle, after an initial period of development, were similar appearing within five months to a year after the stock had been depastured on the affected country. Sheep showed signs of disordered health earlier than cattle as the condition of the animal deteriorated in relation to the abundant feed to which it had access. Soon afterward a pronounced unthriftiness in appearance set in with the wool of the sheep becoming lustreless, dry and harsh to touch, while loosing its natural curl and to stand up like hair on the body. In cattle much the same train of symptoms took place until finally the victims of this malady would lie down and die of starvation amidst plenty. In general this

progressive anaemia appeared earlier in young stock than in older though animals removed to another district where the feed was to all appearances worse recovered quickly with no medical treatment whatever being able to return for a limited period to the affected area once more. This ability to recover quickly after a short period in healthy areas proved that the anaemic condition was not due to the presence in the system of any microorganism or blood parasite.

Post-mortem examinations revealed nothing which could be determined as causative of the progressive anaemia which Parks had concluded in 1898 was due "apparently to some deficiency in the soil of the locality." ²¹ He went on to state "if some of the settlers would take sufficient interest in their stock and administer carbonate of iron one might see what can be done to improve the cattle on the pastures without removal" ²² This prelude to later lines of investigation went apparently unnoted. In 1899 Dr Gilruth arranged the first definite experiments. In conjunction with the Thames Valley Land Company a number of sheep, all showing advanced symptoms, were taken to the Government station at Wirangi some one hundred and nine miles from the affected country where they were placed in a two acre paddock previously ploughed and harrowed until no weeds or grass were visible. Feed on grass raised three times per week from a farm on the affected country where control sheep were held in addition to those on the Estate. Of the sheep removed all but those in the weakest condition on arrival recovered whilst only twelve

of the original thirty six on the estate could be mustered. Gilruth concluded that "the remedy is to be sought more in a system of management than in any drugs or treatment of the land at least as far as sheep are concerned" ²³ Changes from the affected country to paddocks outside that area every few months became the norm for the next decade.

Disinchanting, impoverished by stock losses the early settlers began to leave the district for the Waikato during the opening years of the new century. Some salvaged as much as they could, others simply walked off while those that remained farmed indifferently using outside work as a much needed financial clutch. "Weighted with one hundred and sixty pounds for house, fencing, grassing, garden and orchard, " ²⁴ these words in the Gazette bear mute testimony to all that was left of one man's efforts. By 1904 it was noted that "Mamaku is gradually losing its best settlers, another, Mr H.M. Martin having left as he has better prospects in Rotorua" ²⁵ Indeed, with his brother Joseph, he bought McKenzie's Northdale farm. Once in the bush sick areas for any length of time it was realised that those areas where dyolite outcrops were to be found were generally sick whereas the presence of numerous streams and swampy soil, especially where these streams issued from the hills denoted health land" ²⁶ That area from Tarukenga station to the lake side as well as areas around the lake edge including Te Ngae were notably healthy. McKenzie is said to have told the Martins "to stick

to the flats and so long as a cow will shit this is good land" ²⁷

Martin brothers built up the Northdale farm into one of Rotorua's show places, Aimed at supplying the Rotorua milk market and later also cream some one hundred and twenty cows were milked by hand. The style of farming was efficient employing fifteen men for cropping and milk delivery. Indeed the Bank Manager is said to have used this farm as justification for loans made on bush sick farms. These men still retained their eight hundred and eighty acre block at Mamaku using it as a run off for their stock.

"Sir in my opinion the land policy should be to settle our waste lands, the lands which are unproductive at the present time and which are in many cases deteriorating in value because of the excessive growth of noxious weeds". ²⁸ Goaded by this oft expressed sentiment, backed by the land hunger of the period plus belief in the principal that on settlement of the land depended the substantial progress of the colony further lands were opened for selection on the Volcanic Plateau. These were of substantially three types, the bush lands of the Rotorua lakes district, pastoral lands extending over a lot of the area to the south of Rotorua as well as those settlement lands formerly part of the Thames Valley Estate. In addition private development also occurred in the latter areas.

Further lands were opened in the bushlands of Rotorua throughout the period to 1911 by which time much of the confiscated and Crown lands

Plate Five.

Mamaku About 1900

(Rotorua City Museum)



had been opened for selection. Notable years in these activities were 1903 and 1906. although most years saw further openings increasingly away from the railway. In 1904 this report appeared "an increasingly brisk demand for land has been continued in this district throughout the year; settlement is extending rapidly from Rotorua as its centre. A great deal of these lands have undoubtedly been taken up mainly with a view to securing the timber upon them. The country when felled and burnt takes grass freely, but the bush disease has as yet precluded the possibility of grazing sheep or cattle and in the circumstances dairying is impossible. The future of these lands is largely contingent upon the settlement of the difficulty connected with the disease in cattle; otherwise these lands can never be utilized satisfactorily as grazing lands after the removal of timber" 29

Nonetheless attempts at farming continued with some as Walsh on the Oturoa road gaining healthy areas, others however continued as before relying on frequent changes of stock to outside, healthy pasture. Disenchantment at the back of activity to combat the "disease" settlers sought through the member for the district to prod the Government into action. In 1909 two petitions were addressed to the Government - the first asking for an experimental station to be set up in the affected district manned by members of the Agriculture Department; the second asked the Lands and Survey Department to open areas at Haumarana to provide change paddocks for stock there. In reply to the latter suggestion it was stated that "stock will not be benefited by removal to the

above areas but require to be driven to paddocks near the sea coast, such as at Te Puke where they can graze older pasture." 30 It had not yet been noted in official circles that those areas which were of a swampy nature and / or watered by numerous streams and springs were healthy.

In response to these approaches work was begun in earnest in an attempt to elucidate the causes of this peculiar sickness. In 1910 five paddocks were prepared in various parts of the affected district using selected top dressings. Additional background material was gained from post mortems, laboratory examinations, soil, grass and hay analysis. Previously it had been noted that the soil contained a normal amount of plant food while one settler, after dosing his stock with bran found this method to be a "palliative" but not a cure for the disease. 1910 marks the establishment of the Ngongotaha Dairy Factory and the repeal of the Thermal Springs Districts Act.

Five people spoke in the debate of the latter measure which passed straight through the Legislative Council unopposed. This Act meant that anyone who wished to buy or lease native land could,

1. if there were less than ten owners deal direct with the proprietors with any alienation being later confirmed by the Maori Land Board.

2. if more than ten owners he could put his proposal before the assembled owners, who if they agreed to it this would give him clear title from the Board

3. if one owner he could apply to have that owner placed on the same footing as a European.

Massey stated in the debate; "Sir I am not going to oppose this Bill, on the contrary I welcome everything in the way of legislation which makes for the settlement of our waste lands both Crown or native" ³¹ Following a measure dealing with ordinary native lands passed the previous year this sentiment was no doubt the major reason for its introduction. Nonetheless in the speech of MacDonald (M.P. for Bay of Plenty) he states "the lands surrounding to township of Rotorua were capable of producing good crops in the way of either agricultural produce or grass for pastoral purposes. The residents of Rotorua are thoroughly convinced that the district, with development will become a large dairying centre" ³²

In the decade following the opening of the first pastoral runs on the Kaingaroa plain a further twenty seven runs were made available for selection. Covering a total of three hundred thousand acres these runs covered much of the Crown Lands south of Rotorua. Of the thirty three runs eighteen were occupied at least part of the time to 1913, with six remaining so at that date. Of these A.G. Graham's lease at Wairakei was more an adjunct to the expansion of his tourist hotel although an orchard of five hundred trees was planted while sheep were experimented with for three years. Little of a farming nature apart from the planting of an orchard accrued on McKinleys' run behind Acacia Bay. The other four which remain present different propositions however as G.H. Woods at Waimangu, Anderson and

Faloona with Mair at Rerewhakaitu and very late in the period W.J. Parsons in the Whirinaki Valley were all actively farming. All remained in possession of their properties through and beyond 1929 with the exception of Mair whose run passed to H.L. Brett. Of these Parsons was to become a vocal champion of the settlement potential of the pumice lands while the success of the others provided examples of what could be done.

Private development continued bordering the Kaingaroas western fringe with further settlement also along the Taupo - Napier road. Tauharu station, which passed via the Bank of New Zealand to W.H. Smith in 1894 following twelve months unsuccessful ownership by another was one of these. Farming moderately successfully Smith held the property until 1912 when he sold to J. MacFarlane before taking over the lease of the Te Ngae Mission Station. The neighbouring Loch Inver station similarly passed to the Bank of New Zealand who farmed it until 1899 when Nelson Brothers took it over. They in turn continued to run the property until 1912 when James Carswell bought it. To the north to the Taupo to Napier road Crawford bought the Runangu estate - sixty six thousand acres of impossible troubles which passed via two others to G.W. Russel M.P. for Riccarton. This area was scratchily farmed by one of his sons for (s) short period. 1896 saw the settlement of the first permanent European land holder between Rotorua and Taupo when Christchurch fellmonger T. Butcher, bought the land to be known as Strathmore estate, From this property some twenty five thousand acres, were bought by

Stead and Watt in 1911, which with an area of native lease became the Reparoa estate. In 1907 Edward Earl Vaile, best known champion of the pumice lands, bought 53,000 acres to the south of Strathmore. With the exception of Runanga all these properties ran sheep and cattle fairly successfully with the beginnings of dairy farm development being pursued at Reparoa. Maori owners on various blocks throughout the pumice lands ran small flocks for varying lengths of time until the activity palled.

In 1905 the Thames Valley Estate was bought by the Government for an all over price of eight shillings an acre. Prior to this the controlling interest in the Company had passed to the Assets Realization Board. It should be noted here that 56,000 acres in the Maraitai block along with lesser areas, all unoccupied, in the Waotu district also passed to that body in the 1890's. The land in the southern portion of the Selwyn Settlement was described as being light but capable of responding to suitable manuring and farming practice to make good mixed farms. In all some ten small grazing runs in addition to a number of dairy farms were opened up. Some remained open until 1911, including two which had been abandoned. These were described as being third class land "with inferior light loamy soil on rhyolite, well watered" ³³ available for three and six an acre. Through these ran the Taupo Totara Timber Company's line to Mokai, which also gave access to the Auckland line. Some of these allotments were taken up for their timber, notably that of the Bartholomew

land and Timber Company, but for the most part those taken up were farmed at least initially. The sole private developer in this part was Mr F.C. Barnett who held a block of Waotu land. Sufficiently encouraged by the developments in this block a skimming factory was established at Lichfield in 1910 which lasted three seasons.

CONTEMPORARY EXPERIENCES

"It wouldn't feed a grasshopper to the acre, the only sign of life that I could see was dead bones;³⁴ rabbit to the acre country³⁵; the black desert ; these were some of the popular opinions held by the value of the pumice lands of the Volcanic Plateau. "Over by far the larger extent of this great territory under the natural conditions of the country domestic animals do not prosper. It is more than possible that two thirds of this country must remain comparatively unoccupied apart from those areas on the better class of country"³⁴ Thus wrote the Agriculture Department in pressing for further grassing experiments. "Cattle over an immense area from Taupo to Tauranga are liable to the disease, and it is rampant at Mamaku"³⁵ thus by 1910 the extent of bush sickness had been seen to cover the whole locality.

The Taupo Totara Timber Company offered to cooperate in grassing experiments with the Agriculture Department. In 1909 these were begun with the selection and planting on the first furrow of selected grasses on four ten to twenty acre plots dispersed throughout the pumice lands. By 1912 the results of these

in addition to those on the Lichfield experimental farm were found to be very encouraging. Red clover especially as well as cocksfoot, yorkshire fog, crested dogstail, tall oat grass all did well whilst at Mokai "as fine a sward of cocksfoot in the first season as it usually seen on grass of two years old"³⁶ Longer running experiments at Lichfield proved promising for lucerne, swedes, turnips, grain with additional research into the effects of various fertilisers. At this time strong pleas were made regarding the importance of raising the humus content of the pumice lands as a preliminary to raising fertility with phosphatic fertilisers being urged to be used also.

Petitioning Parliament in consecutive years, 1911 and 12, the Taupo Totara Timber Company sought authorization to extend their tramline from Mokai to Taupo. In this they were encouraged by the above experiments and with this action the beginning of a reassessment of the pumice lands is seen in embryonic form.

REASSESSMENT

Evidence before the successive committees which investigated the two petitions almost unanimously agreed with Findlay when he said "this land must remain idle unless you have a fair means of carrying fertiliser cheap and transporting stock to market"³⁷ The necessity of a railway was agreed but the route most suitable saw conflict between those who like Vaile and the Rotorua Chamber of Commerce urged the Rotorua to Taupo link against that from Mokai. This aside the bulk of the evidence supported the contention that with "manure and fertiliser the country was capable of

producing crops, roots, grass and fruit." ³⁸ Official circles, notably the Agriculture Department felt that although the view of the country was hopeful farming required capital as all the land had to be improved. To them holdings of more than five hundred acres, excluding any very rich swamp, were necessary while only on small areas could dairying be carried out, the bulk being sheep country. To a certain extent the Lands Department was more optimistic considering that while without capital it was impossible to farm very large areas, smaller areas would provide a good living where transit became available. Some private individuals notably McLean, moving from the accepted view that there was no demand for these lands saying "that practical farmers of this country by their very attitude to the pumice lands offer weighty and tacit opinion against optimism" ³⁹ It was noted that a man named Fleming had cleared and grassed two hundred acres in one year on one property - all of which remained was the grass. This settler could have been one of those mentioned by Ward and Campbell who are said to have taken up land in the Te Atiamuri survey district near the Waikato river about 1911 and walked off soon after. It was estimated that this country would carry variously one or two sheep per acre although MacDonald disputed the view that stock could be bred on these lands little was said about stock sickness although sheep at Mokai were said to be healthy.

In evidence to the committee a general picture of the pumice soils, climate and vegetation was given. Described as

having large areas of flat and hilly land covered to a depth of many feet with a layer of wind blown pumice at an altitude of from one to five thousand feet, with a rainfall of fifty to seventy inches, varying in vegetation cover from forest to desert scrub. Soils, varying widely but generally classed as coarse sands were formed largely of pumice and other ejcitamenta blown out of the earth and scattered by the wind - aided by the fact that the acidic lava frothed in its molten state, intimately mixed with volcanic gases had a very low specific gravity. With very little weathering this material forms a soil that will support a luxurious growth, the soil retaining all the elements and in the same proportion that were found in the parent rock plus some decaying material. The copious rainfall allowed to drain rapidly away due to the porous nature of the soil, while on those areas where the soil had been compacted excellent capillarity results. Streams and surface water, where they occur, are generally found at the bottom of deep gorges worn through the easily eroded material. Owing to the absence of clay particles in the soil it can be worked at any time, wet or dry without puddling. As already noted the action of frost on the Kaingaroa plain often uprooted young plants through expansion and contraction heaving up the soil.

Although the first petition was returned to Parliament with no recommendation that of 1912 went forward advocation that an order in council be granted for construction as "it is desirable that inducements be offered to settlers to occupy land in the

vicinity of the tram line and Lake Taupo. To this end facilities for economical transit of manures and produce are necessary" ⁴⁰ This was acted upon.

In the evidence of H.L. Wilson details of the plans of a Canterbury group subdividing land in the Tokoroa No 1 block for settlement. Of the land, recalling previous investments in the Waikato which did not get much money back they stated that "this time they are going to get it back" ⁴¹ In addition to this group known as the Tokoroa No 1 Land Company, a group of Hawkes Bay farmers were investing in the same block while a Wellington based company, Mākaetai Farms Ltd, and two Christchurch men Hill and Atkinson bought up blocks of sixty and fifty six thousand acres respectively. This strand of private settlement was to play a part in the post war settlement and perception of the pumice lands. In addition F. Carr Rollet paid another visit to the pumice lands concentration on the part under discussion in a further series of articles.

"The settlement of the native lands near Rotorua and the progress of dairying is aiding the development of the locality," so wrote the Commissioner of Crown Lands in 1912. Nonetheless the factory at Ngongotaha was forced to solicit the aid of those farmers in the Tirau, Matamata and Okoroire areas to make up the deficit in butterfat production caused by local farmers failure to meet pledged stocking rates. In an effort to help a concern they had had a large part in launching the Martins took half their herd from town supply as additional boost. Reliance on

those outside areas was retained until the Reparoa settlement was well under way after which they were gradually relinquished. In 1912 the Agriculture Department bought a property close to the Mamaku Railway station to aid in bush sickness experiments.

Of the experiments with dressed pasture Aston and Reakes could write in 1913 that "while the sheep experiments did not on the whole yield such definitely good results as did experiments limited to cattle alone, yet they proved of great value and information obtained from them will, it is anticipated, greatly aid in overcoming the difficulty of bringing the bush sick lands into profitable use for pastoral purposes." ⁴² The bulk of the evidence at this time pointed to a lack of assimilable iron in the food supply as being the cause of the sickness though it was felt that the presence of an excess of manganese may have been a contributory factor. The outlook was now, so they felt narrowed down and the future decidedly promising. This optimism pervaded their reply to J.W. Wrigleys, long time farmer in the bush at Mamaku, when he demanded the withdrawal of sick lands until the cure had been found. In the meantime they had to agree that the best method of utilising those sick areas was from a farm on the free healthy lands outside of the Volcanic Plateau.

The pumice lands soil and climate having proved eminently suited to certain types of exotic soft wood tree, including pinus radiata, larch and certain encalypts it was not surprising that the Royal Commission on Forestry in 1913 paid attention to the potential of the area. By that year the Whakarewarewa and Waiotapu

plantations had grown to five thousand seven hundred and forty nine acres and six thousand seven hundred and forty eight acres respectively. It is not surprising that one of the recommendations of that Commission reads "the ease in working the pumice lands and the excellent manner in which trees of many kinds grow,, mark out these lands as the most suitable of any in the Dominion for afforestation - a large area should be set aside in the north of Lake Taupo for this" ⁴⁵ Bush sickness in association with the failure of their experimental plots of pasture grasses proved to the satisfaction of the Forest Service that they were not infringing potential agricultural areas. In addition large areas of Crown lands were available to meet the insistent public demand for accelerated planting of soft wood trees to meet an oft mentioned fear of a world softwood shortage together with a fear of dependence on imports of wood and wood products especially newsprint to meet an accelerating domestic demand. The length of time taken to replace indigenous forests, the widespread reduction in those forests, kindled the fears. Favouring the area were additional factors including the Rotorua railway, proximity to urban Auckland and the ability to utilise prison labour within the pumice lands.

In 1913 F.G. Dalziel of the Taupo Totara Timber Company wrote a series of letters to W.J. Massey, Prime Minister and Minister of Lands advocating the development of the pumice lands for agriculture. In these it was noted that two difficulties were in the way of settlement the doubt in the farming community

as to the value of the land and the difficulty of raising capital to undertake such development. Financial institutions had already decided, almost unanimously, that the bush sick lands were no security for loans. In the vanguard of this movement was the Advances for Settlement Department which had placed a black ring around the sick areas of Matamata country, the Mamaku area and denoted as slightly less sick much of the rest of the pumice lands. Nonetheless despite the reluctance of the finance houses to back development there Massey wrote in February, 1913 to Dalziel. "As Minister of Lands I intend to have some of the Crown blocks in this district opened up for settlement as soon as they can be got ready, and if possible I intend to make it a condition for settlers going on such land that they should possess sufficient capital to carry them on until occupation becomes profitable" ⁴⁴ In his instructions to the Undersecretary of Land he wrote "I wish to have a block of Crown land in the Taupo district for settlement next season - of good quality with convenient access either by road or railway" ⁴⁵

Despite these activities, which led to an assessment of a large area of pumice country the Massey Government accepted the findings of the Royal Commission on Forestry, prompted by numerous demands from interested bodies, and so the Kaihgaroa state forest began with six hundred acres in 1913.

The stage has been set for the reassessment of the pumice lands potential for agricultural settlement which hindered by the war burst forth immediately thereafter.

"The Black Ring"

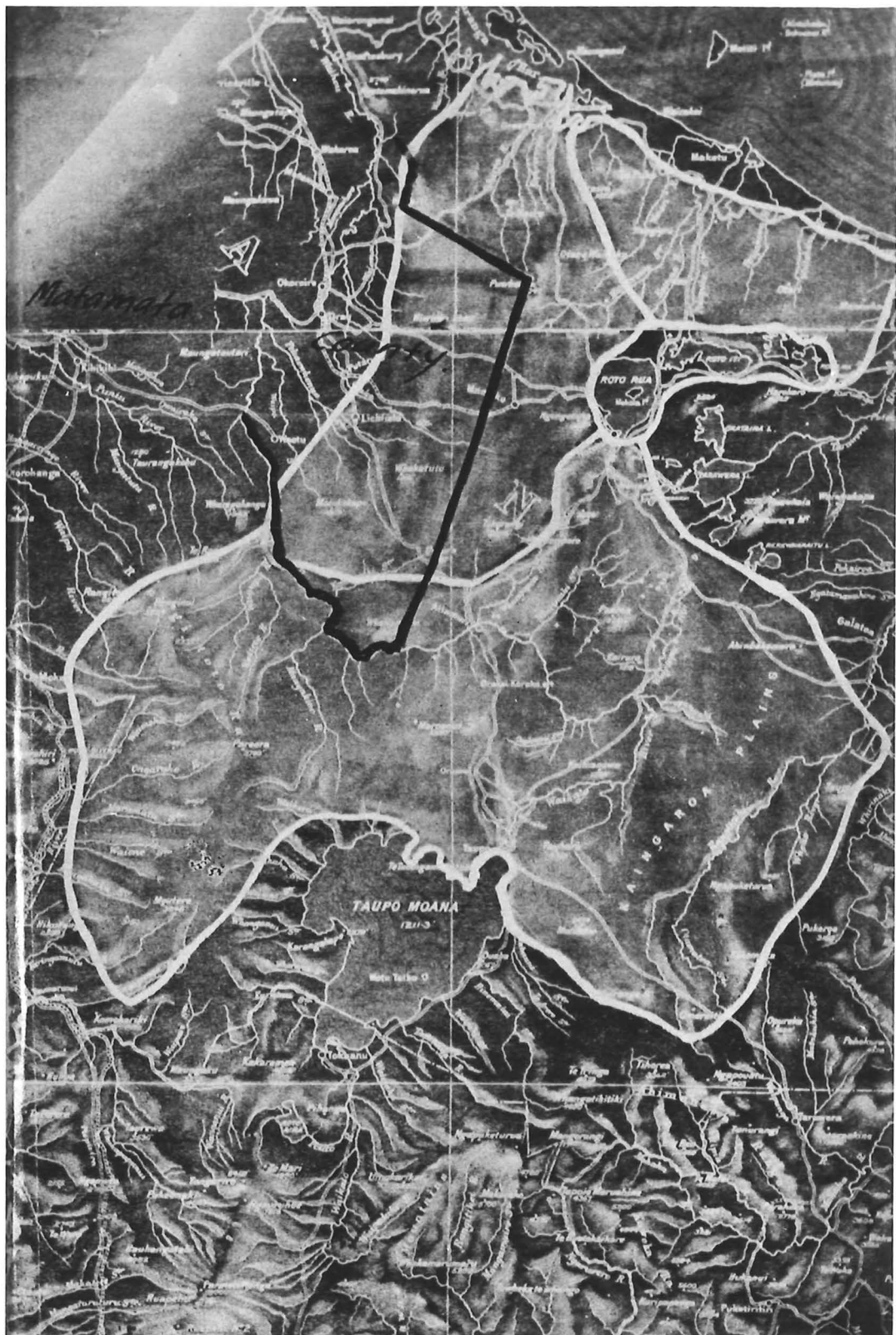
"Bush Sick" country as outlined officially in the year 1913, and within which inhabitants were black-listed for finance.

The area marked to the east of Putaruru as far as Lake Rotorua, and extending to Tauranga in the north and to near Atiamuri in the south, is that in which sickness was stated to be most prevalent.

In the larger marked area to the south, and the smaller area to the north of Lake Rotorua, the sickness was stated to be not so bad.

It will be noticed that Putaruru is situated on the edge of the middle of the worst area, and that was why financial institutions both State and Private had "a Black ring" drawn around the town and the entire district within which they would not lend money

(source Vennell C.W. et al History of the Matamata Plains
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BUSH SICK AREAS AT 1913.

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CHAPTER THREE:

PROCESSES AND PATTERNS OF SETTLEMENT 1914-1929.

Although 1914 marks the beginnings of a phase of re-evaluation of the agricultural potential of the pumice lands the lull induced by the war years meant that it was not until the period 1917 to 1922 that its ramifications were earnestly pursued. However even during this period of apparent lull, and continuing into the twenties, private development, further experiments into bush sickness, the establishment of change paddocks at Haumarana, as well as continued afforestation occurred adding to the ongoing perception of the region. With the report of the 1922 Royal Commission into the Rotorua to Taupo railway petition this period notable also for the establishment of soldier settlements at Reporoa, Rotorua and Tirohanga, can be said to have been terminated.

OFFICIAL ACTION

In the course of an extensive visit through the pumice lands of the Volcanic Plateau early in 1914 W.J. Massey, Prime Minister and Minister of Lands, met a delegation at Rotorua. Included in their supplications was the fact that change paddocks of between twenty and thirty acres at Haumarana were vital to the district. By 1916 these were provided when the Lands Department opened more than forty such allotments on the northern shores of Lake Rotorua averaging thirty acres in size. Furthermore the difficulty of obtaining money under the Advances to Settlers

Act was also brought forward at that meeting. As a result of this visit a wide ranging review of the available lands and their potentialities was ordered to be undertaken by the Lands Department.

Approximately three hundred and fifty thousand acres, including some thirty three thousand acres under lease, were investigated in the Rotorua and Taupo counties. Of these lands those bordering the northern shores of Lake Taupo, adjacent to the town, being some fifty thousand acres of "level to undulating pumice land not well watered covered with fern, tutu, teatree and tussock" ¹ were declared suitable for settlement purposes. Similarly two runs, one near Tarawera Lake and another in the Round Hill region south of Rotorua were similarly adjudged in one and three holdings respectively. Valuations on those lands declared suitable for settlement ranged from five to eight shillings and acre. The bulk of the area under investigation being the crown lands on the Kaingaroa plains were described as "undulating land covered in teatree, tussock and manaoa of very poor quality, badly watered and practically useless for settlement" ². Valued at two and six an acre these lands were declared more suitable for afforestation. An additional run, number seventy eight at Tarawera, was described as most unsuitable for settlement.

Accompanying this was a wide ranging review of the potentialities of the pumice lands which were generally

Land deemed "practically useless for
settlement". (Report on Lands and
Survey Taupo Lands Closed File 22/894
Wellington).

(N.Z. Forest Service)



described as an elevated plateau of between twelve and fifteen hundred feet above sea level with a fairly even surface and the bulk badly watered. As to the climate a rainfall of fifty inches, well distributed, was said to be accompanied by severe extremes of heat and cold, winter frosts of up to seventeen degrees with biting southerlies at that time also. Little was said about the soil except that it was light pumice ash on which grazing had been unsuccessful except for areas of gullying or drained swamps.

Emphasis was placed on the potential of the area for fruit growing especially of apples for export as well as cherries, currants, gooseberries and raspberries. Fruit trees it was noted had for many years been growing vigorously and producing good crops at Rotorua, Tarawera, Horohoro and Taupo. The cheapness of the land along with the rainfall were seen as advantages of the Central Otago and Nelson areas.

Inducements recommended as essential in the settling of the land included:

1. cheap freights on the Government and proposed Taupo Totara Timber Company extension particularly for grasses and manures.
2. four years rent free.
3. One hundred to two hundred acres to be set apart for experimental purposes.
4. Area to be profitably worked in areas of from five

hundred to seven thousand acres.

5. Shelter belts were essential.

Furthermore the question of finding the capital to develop the large areas in the pumice country either by private enterprise or by guaranteed state aid was noted as requiring serious thought. The major drawbacks to all activities was noted to be inaccessibility. It was considered to be out of the question to use manures in view of the freight rates although it was stated that once the light railway of the Taupo Totara Timber Company had been extended (authorization of which had been reaffirmed in 1917) the whole aspect of the matter would be altered.

With regard to afforestation the report outlined the advantages, the cheapness of land, its proven suitability for tree planting, inferiority for most other purposes by summing up thus: "the pumice plateau can best be spared for afforestation." ³. Perhaps taking its cue from this report the state plantations of Waiotapu, Whakarewarewa and Kaingaroa expanded until by 1922 twenty thousand acres had been planted. A notable feature of the war years in this respect was the use of conscientious objectors as labour in association with prison labour. In this way it was gradually accepted that afforestation work was a suitable occupation for unskilled workers a consideration which was to be very important as unemployment increases loomed ahead. It was also suggested that belts of forest should alternate

with belts of farmland, in mile wide strips, whilst a proven supply of water was also necessary.

"Settlement of these pumice lands is in the experimental stage but sufficient evidence can be found to justify an attempt to make profitable use of a very large area of land now lying useless. To reduce the cost of transit a railway is the only possible solution".⁴ Thus the question of transport resumes its fundamental position.

Bush sickness experiments continued at the Mamaku state farm concentrating largely on pastoral treatment, plus the use of drenches and licks to try and prevent the "disease". Of the topdressing experiments Reakes was to write "while the value of phosphatic manures as the means of combatting the trouble has been further emphasised it is evident that these alone are not sufficient to completely overcome the problem though they certainly enhance the grazing value of the land too which they are applied to a very great extent and enable sheep and cattle to remain in normal health for a considerably longer period than on non top-dressed pasture".⁵ By 1916 researchers had concluded that bush sickness was the result of a deficiency in soluble iron in the affected area thus giving rise to the name "iron starvation" which was to be used in all future discussions of the subject. It was known that by drenching stock with syrup of iron the animal affected recovered and the knowledge from this the only known medicinal cure was supple-

mented later by the knowledge that a double citrate of iron and amonium drench was equally effective and quicker to react. Although cheap and effective this was not a practical solution as drenching required individual dosing over an extended period of time by hand with the additional drawback that stock, especially sheep, did not take the medicinal treatment readily. Further experiments continued in an attempt to find a more efficacious method of dispensing the solution to the animal. Nevertheless it was stated "with our present knowledge it is clear that with good farming methods and the judicious use of top dressing the land affected can be profitably utilised for grazing and fattening stocks although it cannot yet be confidently advised to take it up for dairying. It can be farmed by those possessing sufficient capital." ⁶. Additional work was begun in the early twenties to develop a portion of the farm to test the suitability of the land for dairying.

PRIVATE SETTLEMENT 1914-1923

Private developments focused upon the southern part of Matamata county, adjacent areas in Taupo county, continued expansion in settling the native lands around Rotorua and Rotoiti Lakes plus additional settlement along the eastern flanks of the region. Notable in the latter regard were the Paeroa, Waiotapu areas along with others closer to the Taupo Napier road. Although begun before 1922 much of these developments only reached fruition at a later date.

The southern part of Matamata county along with adjacent areas in Taupo bore the imprint of four main groups - the Matarawa Land Company, the Tokoroa No.1 Land Company, Maraetai Farms plus Hill and Atkinson. Nonetheless a few other individuals were also active in the area. The Matarawa Land Company, a group of Hawkes Bay farmers holding a block of eight thousand acres about and including the present town of Tokoroa, set out initially to develop one quarter of that area. This land was cleared, grassed, subdivided into allotments of around one to two hundred acres, with houses, fences, and farm buildings provided to be leased on five year contracts with the right to purchase at twenty five pounds an acre. The Tokoroa Cooperative Cheese Factory was established by this group having an initial eight suppliers when opened in 1919. The Tokoroa No.1. Land Company sought to emulate this development on a smaller scale leading to the settling of a number of farmers in the district. Unlike the previous two groups the Maraetai Farms Syndicate were content to subdivide their sixty seven thousand acre block into holdings ranging from two hundred to one thousand acres, provide road access and sell them for between two and three pounds ten shillings an acre. People were attracted predominantly from Canterbury, the Wairarapa, Taranaki and Hawkes Bay to settle these lands. Further to the south Hill and Atkinson in association with K.S. Cox put in land the development of five thousand acres at Ongaroto (Atiamuri Station) whilst the former two were instrumental in establishing the ten thousand acre Whangapoa Station. Both these developments began in 1908 and along

with individuals such as Shirtcliffe completed the stream of settlement dependent on the Taupo Totara Timber Company's tramline. The great bulk of this settlement, some thirty five farms concentrated upon the first fifteen miles of that line including land previously settled within the Selwyn settlement.

Strong competition was experienced between settlement and milling interests for the available native lands adjacent to Lakes Rotoiti and Rotorua. Notably in the Rotorua to Ngongataha area these lands were subdivided into areas predominantly less than one hundred acres although some were much larger. Whilst a large proportion of these lands were taken up as adjuncts to farms in the immediate vicinity or as holding paddocks for the larger estates others were new developments. Butcher, Troutbeck and Faloona were notable entrants in the stock holding category buying areas on which to restore their stock to peak condition after droving from their respective estates prior to railling them to Westfield. With the exception of men like Hunt, Ford, Leonard and Smythe most of the new farms were established to the east of Rotorua, behind Te Ngae or around Lake Rotoiti.

W.H. Smith esconced on the Te Ngae Mission farm took the opportunity of increasing his holding to five thousand acres by lease or freeholding native land nearby, Carr brothers (Omania Company), Gee brothers, Vaughan and Petthy-

bridge developed farms nearby whilst to the north of Lake Rotoiti Lichenstein and Arnoldson developed the Rotoiti station with Cooper at Okere Falls also developing a farm nearby. Watt, Emery and others established farms on the southern shores of Lake Rotoiti with Dowling, Knowles and Evans taking crown leases about Lake Okareka slightly later on. These farms were largely responsible for increasing the sheep population of Rotorua county and along with the fattening of cattle provided the main income, although Vaughan's holdings were largely an adjunct to his butchery business. However the flocks on each farm were notably unstable in their size with large fluctuations from year to year being very noticeable.

Along the western side of the Rotorua to Waiotapu road men like Handcock. T.L. Butcher and B.C. Lowry became established. Some of these areas backing onto the Paeroa range were notably healthy with Campbell noting that the "longer roots of native grasses and bush here seemed to aid the supply of trace elements in some way".⁷ Nevertheless apart from Butcher's holding sheep were to disappear or be held in small fluctuating numbers after an initial period whilst Lowry's attempts to farm were rapidly curtailed. Similarly the thirteen thousand acre Wainui estate bought by Macklow brothers, the efforts of Brown and Grierson at Wairakei along with Edwards and Mostyn Jones on the Kaingaroa were short lived. The Ngatopa Pastoral Company further east was

more successful as was Turnbull at Murupara.

THE RETURNED SOLDIER SETTLEMENTS

The opening salvo of a new series of articles advocating the settlement of the pumice lands was fired by the New Zealand Herald in 1916. Aimed at convincing the Government of the advantages of settling returned soldiers on the unproductive lands of the Dominion rather than on the developed land carrying inflated valuations this call was echoed in other quarters. To the fore in this advocacy were groups in Rotorua, Bay of Plenty, Waiotapu, Putaruru and Tokoroa some of whom advocated the closer settlement of developed land within the district. In the immediate post war period this activity was reflected in Parliamentary activity, despite the fact that only three years earlier more than one estate had been rejected as not the class of land that the Crown should acquire at the present time for settlement purposes.

Fears that afforestation work was beginning to encroach on land eminently suitable for agricultural settlement led bodies at Rotorua, at first individually but later collectively to bring various blocks of land forward for favourable consideration by Government. In 1919 the Rotorua Chamber of Commerce, County Council, local branches of the Farmers Union, A. and P. Association as well as the Bay of Plenty Development League had focussed their attention upon a sixty thousand acre block of native, crown and national

endowment land south of Rotorua. "All fit for immediate settlement this station contains good turnip and clover land which is capable of developing into good pasture," 8. thus wrote the Whakatane Press of Galatea station. Advocacy of the settlement of this station was pressed by the Rotorua - Bay of Plenty groups above along with the Taneatua Settlers Association. Farther to the south the Waiotapu S Settlers Association rebuffed earlier when some of its individual members including Butcher, Vaile, Stead and Watt had put forward their properties produced a pamphlet 9. putting forward proposals for pumice land settlement in 1918. In all some one hundred and three thousand acres were mentioned being the total area of Reporoa, Strathmore, Wainui and Broadlands. Accompanying the details of these estates were lists of prizes won by root crops and stock from the area at pastoral shows or at Westfield to bolster their claims. To the west the Taupo Totara Timber Company plus a group of settlers at Tokoroa also advanced the claims of the region.

The farmers urged that 10.

1. A commission of experts be appointed immediately to go into the whole question of developing this district.

2. that legislative power be taken enabling crown and native lands with timbers thereon plus the company's railway be put under the control of a board and dealt with in a comprehensive way with the Government taking power also to

raise moneys upon the security of these lands both for crown and native settlement.

3. that consideration be given to the question of establishing a soldier or native settlement on European lines in the district under the supervision of settlers who were successfully farming this country. Moneys to be raised on the security of the whole of these lands be vested in the said Board be used to pay soldiers and natives for any work they may be employed to do in developing the settlement. Those who became qualified farmers should in the event of settlements proving successful receive farms at the cost of improvements. In the event of settlements proving valuable, they added, an enormous area of land would at once be available for settlement, while in the improbable event of failure they would have been paid for their services receiving training under competent supervision. To aid the scheme the company made the fine offer of as much land as would be deemed advisable for the scheme from their freeholding there.

"Investigation will show that there is an enormous area of this class of country in a climate and with living conditions unexcelled in the Dominion, which, treated in the right way and properly financed could be more profitably farmed than much of the higher priced land of the Dominion.

11. Thus stated a petition addressed to the Prime Minister by the settlers of Tokoroa, Putaruru advocating that the Maraetai Farms syndicates offer of their block at three

pounds an acre be accepted. On this they estimated one hundred and fifty soldiers could be successfully settled in allotments of between one fifty and two hundred acres. In addition they sought an investigation into firstly, the attitude of the lands and finance department towards the pumice lands and, secondly, the position and prospects of the Taupo Totara Timber Companys railway with a view to some arrangements being made whereby the facilities it affords to the settler may be made adequate to the needs of the district.

Assembling the Commissioners of Crown lands to a conference with himself and the Undersecretary of Lands D.H. Guthrie (Minister of Lands) set the tone of this April 1919 meeting when in his opening address he said "We must persevere in our endeavours to promote the closer settlement of our lands on sound, sensible and practical lines. In the development of the country naturally the best, lands were settled first with the result that today we find ourselves in the position of having all the good lands of the country in occupation while the poorer lands are still unproductive. There is no country in the world that can afford to allow millions of acres to be idle if there is a possibility of doing something with them. We have millions of acres of pumice lands.....which I inspected as comprehensively as possible and from what I saw I am absolutely confident that with the expenditure of a reasonable amount

per acre there is an assured future for them." ¹². Thus when a remit dealing with the pumice lands was reached it was not, as had occurred at a previous conference three years earlier, brushed aside undiscussed. Nonetheless the expressed opinions were cautious summed up by Undersecretary's Brodrick's contention that "it is absolutely impossible to settle soldiers on these lands unless the Government is prepared to make an extensive outlay. It is purely a matter for the Government to say whether they are prepared to bring in a large tract of that land by appointing a proper supervisor letting him take a number of soldiers whose wages would be paid for by the Government and bring the land into order so that it may be partitioned amongst the soldiers." ¹³. Thus inaugurated what was to be a golden year as far as the pumice lands were concerned with the introduction of two pieces of legislation, the passing of one, along with the buying of the Reporoa estate for soldier settlement. Following what he felt was an apparent lack of effort to instigate the budgets promised "steps to deal with poor lands of the Dominion such as the pumice lands" ¹⁴. Sir Apirana Ngata introduced his private members "Pumice Land Development Bill" ¹⁵ in October containing provisions which were an almost carbon copy of those advocated by the Taupo Totara Timber Company the previous year. Ngata felt that concentration and specialisation were keys to the successful utilization of these lands. In terms of settlement the Board

the bill was to establish was to control all Crown lands having the powers of a Land Board plus the administrative power of the Minister of Lands and his Department so that it could initiate as well as carry out settlement. It was proposed that the Board should set up and maintain an agricultural and scientific experimental station and training farm as the headquarters for further development. Supported by long standing proponent of the pumice lands. Young, Member for Hamilton, as well as G. Forbes, Jennings and Anderson this bill did not get past the first reading, though drawing a series of illuminating comments from W.J. Massey including - "we want a railway and cheap fertiliser", "we have a report valuing the land at five shillings an acre" and "we will give you a thousand acres on the Galatea plains if you will go up and try to grow good roots, etc.". ¹⁶.

Following a report by H.M. Skeet in which he concludes "I think that special legislation should be passed to provide the necessary funds to develop this country, care being taken to see that sufficient money is provided to ensure success", ¹⁷. a clause was added to the Land Laws Amendment Act of 1919 affecting the pumice lands. Reviving the old homestead system it was established that land could be brought under the provisions of that act by proclamation of the Governor General. Classified as either second or third class land any such land could be subdivided into allotments of four hundred or a thousand acres maximum respectively.

Within twelve months of taking up such land the licensee had to build a suitable dwelling and aside of the land in question. At any time after seven years of holding the licence the licensee who had complied to the satisfaction of the Board with all the conditions of the licence would be entitled without payment to become the owner in fee simple of the land. The clause also authorised the borrowing of up to a million pounds in any one financial year to meet roading and other expenses, the upkeep of which the land was exempt for four years. Acceptance of the idea that the pumice lands had no inherent value in themselves attaining a value with the improvements carried out on it as well as the acceptance of the need for financial expenditure by the Crown is reflected in this Act.

Of the lands offered to the State during this period most were rejected. The Galatea station was said to be unsuitable because of its distance from a railhead, the cost of cartage, bridging and roading required along with a feared difficulty of finding settlers for such an isolated locality. Strathmore, Broadlands and Rotiti shared the fate of being considered "not suitable for either general or special settlement by returned soldiers." ¹⁸. The Maraetai estate was said to show "as far as it goes promise of success and no doubt areas could be found all the way to Taupo where after judicious treatment and liberal use of fertiliser could be made self supporting." ¹⁹. However when

the directors of that syndicate sought to arrange the settlement of their block through migrants from England what finally ended all hopes for a scheme was the antagonistic attitude of members of the Agricultural Department who told the British interests that the area was bush sick.

More positive action was taken on the approach made by Rotorua - Bay of Plenty bodies in regard to a sixty thousand acre block between the Waiotapu and Atiamuri roads to the south of Rotorua. After the Forest Service had accepted that plans to plant runs eighty and eighty one should be dropped in view of the marked change in public opinion with regard to the value of these lands a joint committee was established to inspect the area. Consisting of Departmental Representatives H.A. Goudie and H. Monroe along with H.M. Martin representing the local bodies guided by W.J. Parsons their report of April 1920 concluded. "for a depth of two and a half miles along the Waiotapu to Taupo road the country is much too hilly to be economically ploughed and worked up and is more fit for afforestation purposes; on the other portion there are considerable areas which are suitable for settlement in sections from two to five hundred acres, while on some parts of it it would be advisable to increase the sections up to one thousand acres. We feel confident these lands can be profitably occupied and it only needs sufficient inducements being given to attract a suitable class of settler who will do his utmost to break in these light lands." ²⁰. The inducements they recommended

included, rent, interest on outlay or rates be rescinded for the first four years followed by three years of nominal payments provided the leasee conformed to his terms of license. They also felt freehold title should be assured. Accepting this report the Government put in hand the survey of the Crown land in the block to be opened under the Homestead system. Before any of it could be opened however settlement was delayed in 1921 on account of financial stringency.

In 1920 and 1921 the Taupo Tramway Lands and Timber Commission carried out another wide ranging investigation into the district. In their conclusions they were to write "the great bulk of this area is lying waste and barren and it undoubtedly constitutes the largest area of undeveloped waste land in the Dominion and calls loudly for some special action to be taken to bring it into productivity. We are forced to the conclusion from what we have seen that the suitability of these pumice lands for farming purposes is beyond question. The pumice itself seems to contain most of the elements of fertility and those lacking can be supplied by the use of suitable artificial manures. The land that is ploughed seems well adapted to cultivation and land that cannot be ploughed is admirably adapted for forest tree planting." ²¹ After looking favourably on the Taupo to Rotorua railway proposal they rejected any idea that the State should take over the Taupo Totara Timber Company's

line. Nonetheless in response to a petition by E.E.Vaile, Troutbeck and others proposing the establishment of a railway between Rotorua and Taupo brought yet another Commission who brought down a much frostier verdict. "The evidence indicates that for the development to the state of productivity of this great area of land it is essential that artificial manures and other requisites be delivered on the farms and the produce of the farms be taken to the markets at a much more moderate rate than is possible with the present means of transport. The pumice country has been proved to be specially suited for the growth of timber trees," ²². but "of the area which would be served by such a railway the quantity proved to be suitable for settlement is very limited. In our opinion further investigation is necessary to determine the suitability for purposes of settlement of the great bulk of this country." ²³.

This statement marks the status quo as far as the Government's perception of the agricultural potential of the pumice lands was concerned. One can venture to say that in the following years the results of the soldier settlement at Reporoa, Rotorua, Tirohanga in addition to already existing private developments were to be one side of the further experiments. For the rest the rampaging private afforestation schemes along with State afforestation and continuing work on bush sickness mark the other. Undaunted the protagonists of pumice land development continued to

press their claims which became more insistent and more acceptable as unemployment began to rise.

In 1919 the twenty nine thousand three hundred and eighty acre Reporoa estate ²⁴. was bought for soldier settlement at two pounds nineteen an acre. The major attraction of this property was the four thousand acres of undrained or partly drained swamp, valued from six to fifteen pounds an acre, which it contained. Thirteen thousand acres, being a portion of the Kaingaroa plains, was rejected outright passing to the Forest Service causing the Auckland Weekly News to write: "that a special effort should have been made to test the Kaingaroa plains portion not by putting returned soldiers on to raw sections and leaving them there to rot or starve but by improving this class of land at its (the Government's) own expense under modern agricultural methods. If it had done this sort of work and done it well it would have gone a long way to prove whether the remainder of the Kaingaroa plain was capable of improvement and would have given us some definite reason why nearly a half a million acres of Crown Land is to remain idle and useless or whether it could be turned into farming country".

²⁵. On the other hand groups such as the Taranaki Workers Council felt "it would be detrimental to place soldiers there and we suggest such land should be used for afforestation".

²⁶. Such contrary opinion to the settlement brought a group of Reporoa settlers to write to the "New Zealand Herald"

stating "the fact is that a fortune awaits any young man husky enough to secure a section in this estate providing he is prepared for work and some difficulties at the start."²⁷

Although the bulk of the settlement was classed as "first class dairying land" ²⁸. insufficient capital, unseasonable frosts, poor communications, small holdings, cattle sickness reflected in abandoned or forfeited sections and radical re-valuations provided the key note to the first decade of the Reporoa settlement. Nonetheless though their presence was overshadowed by the spectre of abandoned holdings a hard core of seventeen pioneer settlers remained throughout the decade, struggling on as best they could with over half increasing their holdings by amalgamation. Of these four were by the addition of change of paddocks however. Altogether by 1929 thirty eight farms were in being, nine being taken up in that year, with four sections held by the Crown. In all seventeen sections had been forfeit while the total land occupied at the end of the decade came to six thousand seven hundred acres. Only three farms were carrying sheep and despite the long distance to the Ngongotahua factory dairying was the dominant activity.

After an inauspicious start in which three of the first twelve sections balloted were abandoned within sixteen months of that May 1920 date, the settlement had built up to thirty nine sections balloted by 1922. Of these however eleven were vacant, including six abandoned. In 1927 the seven-

teen sections forfeit to the Crown were placed in the Land Guide once more and those that were not allocated were offered with three year rent remission as an incentive. Section twenty four provides an extreme example of the type of pattern which occurred. Originally selected by H.R. Peet, within two years a sub leasee was in residence until 1927 when it was being managed for the Crown prior to H. D. Wilson successfully balloting for it in that year. Section sixty originally leased by H. L. Alexander was swapped in 1923 for a swampland section while his original holding was taken up by J. G. Creamer. Though deemed unsuitable for farming by the Land Board, who advocated it be passed to the Forestry Service nothing was done, and Milligan, one of the pioneer settlers was able to add it to his original section.

Revaluations, remission of rent and other financial commitments follow a fairly typical path, a path illustrated by A. Cameron's section fifty nine. In 1924 revaluation under the recently passed Discharged Soldier Settlement Amendment Act was sought. As a result the capital value was reduced by one hundred pounds, adjusted arrears of rent and current account interest arrears as at June 26th 1923 were postponed for ten and five years respectively. But remission had also occurred in 1921 on three sections when swede, vegetable and other crops were destroyed by frost. On appeal the capital value was further reduced, one

years rent was remitted and one postponed for ten years. In 1929 the property was further revalued. The table shows very radical revaluations in all but one case. A notable feature of that property, section twenty five, is that it is not only markedly larger than the others but also classified as second class land.

Table I

Section	Area (acres)	Capital Value 1920 (pounds)	Capital Value 1924 (pounds)	Capital Value 1929 (pounds)
59	174-2-3	1060	720	670
25	412	720	720	670
40	131	1480	600	420
58	161-2-0	2100	1450	1100
51	135-1-0	1360	1320	640
55	97-0-18	1420	1270	570
34	110-3-21	1140	210	100
33	142-2-8	2510	940	570
30	84-2-18	1260	840	380
31	148-1-08	1360	943	530
38	109-6-20	1360	760	310
50	139-2-3	1840	1200	750

(sources 24/1 returned soldier settlement
26/17309 See 598 Reporoa settlement)

The Rotoma ^{29.} settlement on land described as second class, covered with fern and tutu on the open land with the balance in heavy native bush having fair to good soils covered with Tarawera ash contained twenty one sections. Situated around the northern and eastern shores of Lake Rotoma, ranging from one hundred and fifty to over a thousand acres per section these averaged at three hundred and twenty five acres. One third of the sections had been abandoned at least once before 1927 with all but two being within two years of the 1920 date they were balloted on. Two had three owners and another four before the first decade was over. Sheep grazing or dairying was carried out on this block which shows indication of revaluations similar to Repora, as one farm had its rental reduced from eight pounds ten to two pounds five per annum between its original ballot and when it reappeared for selection following forfeiture in 1927. The Tirohanga ^{30.} settlement attempt may be said to have been a still born one although A.Shirtcliffe remained in occupation of one of the farms for a full decade. Seven sections were offered on land of inferior quality covered in short fern, tea tree and manaoa scrub ranging from thirteen thirty to two thousand eight hundred acres.

PRIVATE SETTLEMENT 1923-29

Haumarana, described as "pioneering at its worst," ^{31.} along with Kaharoa, Te Pu and Mamaku overshadowed those areas

of prospering farming about Ngongotoha, Rotorua as well as previously mentioned farms. Of the first four areas the Auckland branch of the Farmers Union was to write in 1925 stressing "the tragedy, the misery and the undiluted hell that literally pursues this ill-starred body of settlers in this new Armenia."³² Farming concentrated on the Haumarana change paddocks where cows grazed and were milked by hand in rough shelters or tethered in the open whilst the home-stead farms on the hill land at the rear were used as rough run off pasture or neglected to rabbit, ragwort and blackberry. Even these free areas show very high turnover of ownership ranging from one to seven selectees per change paddock in fourteen years with an average tenure of four years. Cheap land plus the feeling that the previous owner was just "a mug farmer, eh, nowhere near as good as me" attracted people to the area. Mamaku likewise attracted new men or those already there like the one who said "it was a pity he (his father) was so keen on Mamaku land. Besides being bush sick it lacked a good water supply and the area was very cold in winter." ²². Occupying a farm at Tirau in the healthy area this man was, as with these few others who remained farming there, to carry on the classic form of farming these lands i.e. bringing in stock, fattening them and selling before their condition deteriorated. Most however retained ownership leaving the farm to rabbit and ragwort whilst earning a living at the mills or some other outside occupation. Nonetheless men like the Martins, Walsh, Dalbeth, Karl, Russell and Smythe prospered on healthy areas.

PLATE 7.

An abandoned farm - all that remained to show for one man's efforts and a mybol that was long associated with the pumice lands of the Volcanic Plateau.

(Lands and Survey Dept.)



Matamata county presents a similar picture to those areas already discussed. In close proximity to Putaruru extending toward Lichfield, Waotu and Arapuni productive dairy farms, interspersed with occasional blocks of fern, tea tree, tutu and scrub, of seventy to four hundred acres were the norm. Here the original extensive allotments of the Selwyn Settlement had been extensively subdivided demonstrating confidence in the capabilities of those areas. Beyond Lichfield all lost heavily on what was described as nothing but "b..... bush sickness, regwort and rabbits" ³⁴. although the familiar hard core of pioneers including Alexander, Bullock, Mossop, Newell, Johnson, Carr, Rollett and others continued throughout the period. "Some of the farms are free from cattle sickness (notably Carr Rollett's Matanuka Downs) but the majority are very bad and a man finds it impossible to purchase a new herd every year, consequently he walks off the farm and loses everything he came with." ³⁵. Thus wrote one of the Matarawa Company leasees expressing the sentiments of those men who left such farms often at the end of a solitary year. By 1927 there were seventy two farms developed within this block south of Lichfield of which more than half belonged to the Matarawa Land Company. No leasee exercised the option of buying any of those holdings with eleven of the thirty seven remaining unoccupied at the end of the decade.

All but two thousand of the original sixty seven

thousand Maraetai Farm block was sold for afforestation 1927 symptomatic of the march of the private afforestation companys whose tentacles reached throughout the area to the very back door of Putaruru itself.

As with all the lands in the bush sick area finance for development was very difficult to come by. Only the stock and station agents were willing to loan money on such suspect lands although some loans were obtained from the State Advances office. One farmer in the Tokoroa area obtained such a loan in the following way. When he first applied for a loan he described his farm as being five miles from Putaruru and was refused point blank. After what he deemed to be a sufficient time he applied again describing his farm as ten miles from Tirau and received the money. In general however, banks, insurance companys and other financial institutions would not lend a sous on the security of pumice land on the Volcanic Plateau.

AFFORESTATION

"In any examination of the world's timber problems we start with two incontrovertible propositions; that forest products are essential to modern civilized existence; and that the world's supplies particularly of softwoods have been so seriously depleted that there is a real danger of a world wide shortage within the next twenty to thirty years. Forests everywhere have been so diminished by utilization, by clearing for purposes of agricultural and pastoral

settlement and waste, that areas once deemed inexhaustible are now seen to be inadequate and there is an unquestionable need to bring in all practicable, actual and potential forest areas up to their maximum capacity." 36.

In this statement can be found *raison d'être* of the private afforestation companies who, after 1923, began to take up land in the region. It provides also the stimulus for the State Forest Service's plan to plant three hundred thousand acres of exotic trees in the decade to 1935. Addition stimulus was provided by the successful pulping for paper of samples of *pinus radiata* sent by the Forest Service to the U.S.A. as an experiment in possible usage.

"For settlement purposes these pumice lands are of small value much of them being affected with the mysterious bush sickness, whilst most of the few attempts to crop it have ended in failure. Now however these mile on mile of barren wastes inhabited only by the wild horse and pig have proved wonderfully suitable for the growth of certain, softwood species." 37. Thus we have the major reasons why the region was chosen, there was no competition for the land which was cheap, cheap to plant (two pounds seven and three per acre) and which the Forest Service, stray plantings and wind breaks had proved excellent for tree growing. Two drawbacks were possible hindrances, firstly lack of rail communications, in part off set by the Taupo Totara Timber Company's lines, and, secondly, the prevalence of unseason-

able frosts. Good afforestation practices overcame the latter which was only of major concern on the frost flats and so the trees carpet rolled onward. Hydro electric power potential with the possibilities of floating timber down the Rangitaiki, provided additional advantages.

By 1929 nearly three hundred thousand acres had been taken up for tree planting by some twenty companies by far the largest of which, New Zealand Perpetual Forests held nearly two thirds. These bond holder forests stretched along the Taupo Totara Timber Company's line to Lake Taupo to the west of the Rotorua-Taupo road with additional areas south of Te Teko, to the north and east of Lake Taupo.

The State Forest Service plantings in the district had by this time been confined to the Kaingaroa, predominantly in the Kaingaroa State Forest, although some additions were made to the Waiotopu plantation. To meet the exigencies of rising unemployment the State Forest Service radically stepped up its planting programme so that whereas only five thousand six hundred acres was planted in 1923, thirty four thousand acres were completed in 1929. In that year employment was given to eighteen hundred people whilst in the seven year period one hundred and twenty five thousand five hundred and forty five acres were added to the Kaingaroa's planted area. 38.

ANTECEDENTS OF LEGISLATION

"Iron Starvation is not known to occur in soils which

are finer in texture than a sandy silt," ³⁹. this realization provided the impetus for a preliminary soil survey concentrating on Rotorua county, undertaken by B.O.Aston between 1924 and 1928. Aimed at delineating the sick from the healthy areas within the pumice lands, this was superseded by a wider ranging D.S.I.R. attempt completed in 1932. At the same time a topographical survey along with continued experiments into bush sickness at Mamaku were also being undertaken.

The finest stage of compaction on the pumice lands is found in river silts writes Aston and the powdered material is laid down into wonderfully fertile alluvial soils which he classed as improved pumice land. Although the soils of Haumarana are extremely coarse in texture this deficiency is mitigated by the high water supply of these lake side lands standing scant inches above the water level. Stock were healthy on these lands although the self sown grasses and clovers which they contained were not recognised as being succulent for dairy cattle. The lands on the east, or Te Ngae side of Rotorua, covered with calcareous mud deposits from the 1886 eruption benefited by the finer material of that top dressing as well as additional lime it contained to provide healthy land.

Backing onto Haumarana was the worst and most unhealthy area of fine gravel sands the Kaharoa - Te Pu area. The soil gets coarser as it leaves the lake climbing the natural

rampart of scrub land overlooking the lake and onto the tawa-rimu forest land beyond. The water drained from the high terrace making it not only difficult to water stock but also leaching out the minerals. To the east are the sandy silts of Rotorua-Manaku. The highest lands originally covered in tawa-rimu were notably unhealthy and whilst the physical properties of the soil remained the same as the land descends to the Rotorua depression the soil becomes less unhealthy. In this intermediate area, proximity to the lake and a more genial climate were said to be reasons why this terrace land could easily be made healthy by treatment. The bulk of the remainder of the country apart from areas farther east under Tarawera ash was soil of a similar type to Mamaku with a number of exceptions.

On the Oturoa road a deposit of sandy loam, originally under beach forest, providing a heavier healthy soil was found in the midst of wind bourne sandy silts. To the south of Rotorua in the area now occupied by the Guthrie-Ngakuru settlers there was found a very large healthy area of water born material of very fine texture. In addition these lands north of Lakes Rotorua-Rotoiti carrying coarse sand and although sheep sometimes became affected it was felt to be likely to respond well to treatment.

In 1926 the Agriculture Department was sufficiently confident in the results of their bush sickness experiments to recommend the following course of action in farming those pumice-lands. "Farm more hi

pumice lands. "Farm more highly, get the plough in; compact the soil, grow plenty of winter feed, and save plenty of hay. Subdivide into smaller paddocks and keep the feed eaten well short. Topdress with phosphates containing iron as frequently as in practice in the Waikato. Treat stock well especially in the matter of water supply. Use molasses freely in feeding stock, especially in rearing young stock, regarding it as a preventative and not a cure. When animals once show signs of going back owing to bush sickness give iron amonium citrate and buy any stock from districts remote from the pumice land and under conditions which ensure that they are free from disease or parasitic infection." ⁴⁰. These instructions were repeated in the New Zealand Journal of Agriculture and whilst gaining some adherents the use of change paddocks remained preeminently the only cure for bush sickness through to 1931. Smallfield writes that on his initial visit to the bush sick lands he visited an abandoned farm house on the table of which there was a copy of that journal opened at the appropriate place, mute warning to would be investors.

As a general rule bush sickness manifested itself in areas fairly high above the level of permanent water, the topography of a flattish or hummocky type, the soil of a type coarser than a sandy loam, deficient in clay and humus, probably well leached, oxidised and low in iron content the substrata of a previous nature and rainfall fairly high.

Meanwhile from 1923 there was the continuation of what had become an almost annual event, namely the visit of Ministerial delegations during the Parliamentary recess. The annual path led through to Taupo onward to the farms of W.J. Parsons, Lee and Hill on the Atiamuri road (or to Rotorua) before returning to the Taupo Totara Timber Company's line at Atiamuri or Mokai. Stops at those places, as well as at Tokoroa and Putaruru, allowed settlers individually or as organised bodies (notably the Tokoroa Progress League and the Waiotapu settlers association) to press for the development of the region. "We the undersigned settlers of the area affected by the Putaruru to Tokoroa railway, humbly beg to draw your attention to the suitability of our class of country as land for settlement" ⁴¹. thus went a petition presented by Messrs. K.S.Cox and J.Campbell to the Prime Minister and the Minister of Lands in 1924 on behalf of the Tokoroa Progress League. Elaborating this group believed "we have our fly in the ointment as well as others but it is not nearly so big a fly as it is said to be. By taking the proper precautions and above all by supplying the necessary phosphates to the soil the sickness could be reduced to a minimum comparable to the percentage of ill's which a herd of cows are heir to in any part of the country." ⁴¹. At the instigation primarily of E.E.Vaile, the Waiotapu Settlers Association continued an annual petition to Parliament seeking the devel-

opment of the pumice lands of the Volcanic Plateau through the construction of a railway from Rotorua to Taupo, or at least to Reporoa. Occasionally Rotorua groups, notably the Chamber of Commerce and the A. & P. Association brought areas they felt suitable for development to the notice of the Government.

The era 1923-27 marks the nadir of official perception and estimation of the agricultural potential of the pumice lands. Although consideration was given to developing a block of five thousand acres under the supervision of J.B. Campbell (Matarara Land Company) nothing was done as Minister of Lands McLeod believed that such development was "not a payable proposition.". Men should receive a fair day's pay for a fair day's work but on that basis the pumice land is not going to be brought into successful occupation without the State losing a great deal of money for many years to come."⁴³. When he was to state in the following year that there were no virgin lands left in New Zealand capable of development the outcry reached throughout the country. Whilst papers like the "New Zealand Herald", "Putaruru Press" were to run features on settlement already existing on the pumice lands others like the Lyttelton Times were to reply: "Tokoroa is a farming district in the centre of the pumice country which twenty years ago was an unoccupied expanse. It is admitted that along the Upper Waikato Valley towards Lake Taupo there is ample scope for settle-

ment and as increased production is an essential for the financial stability of the country efforts on the part of the Dominion are necessary here."⁴⁴ Led by E.A.Ransom, Messrs. Hockley and Young provided lone voices in Parliament advocating the development of the pumice lands although others were becoming exceedingly critical of the apparent lack of a land policy on the part of the Government.

Perhaps stimulated by Astons soil surveys the Matamata County Council, at the instigation of Councillors K.S.Cox and W.Allen, worried also by the surging carpet of exotic trees in their area and the buying up of dairying land for that purpose asked the Government to classify the pumice lands as to their suitability. In reply the Forest Service was to say "the mere fact that there are large areas of scrub lands which are obtained at a very low price is a strong indication - if not a proof - that such lands cannot be profitably used for farming purposes."

⁴⁵. Prior to this in 1925 the Under Secretary of Lands had written "when the Tokoroa Education Reserve was opened in 1924 (twenty three sections, ten thousand five hundred and sixty six acres) applications were received for only three sections and had it not been possible to dispose of that country in one block for afforestation I am confident the land would still be in the Land Guide."⁴⁶

Symptomatic of the increasing pressure for the devel-

opment of the pumice land, the Guthrie settlement was opened following an extensive survey of the available land by the Lands Department. The increasing unemployment, outcry against the drift to the towns and the need for increased primary production were reflected in this decision. The fact that these lands come under the Homestead system is reflective of the view that pumice land had no inherent value its only value coming from the improvements that man made to it.

Reflective of the increasing vocality and organisation of the pumice land adherents, the approach of an election year and the worsening economic situation further action was initiated by the Government. In 1928 work was started on the Rotorua to Taupo railway, an action which drew unfavourable comment from papers such as "The Oamaru Mail", "Winton Express", "Lyttelton Times" which, noting the descriptions of blocks available for selection railed against vistas of vast new settlement being opened up. One of the Reporoa settlers F.M. Ross was also to add his part by saying "that settling people on the poor pumice was nothing short of murder." ⁴⁷. Meanwhile the interested groups in both Rotorua, Taupo and Matamata countys had formed themselves into two united groups the Rotorua - Taupo Progress League and the Putaruru Conference. After its initial meeting in October 1928, the Rotorua Taupo Progress League (representing Rotorua Borough Council,

County Council, Chamber of Commerce, A. & P. Association, Taupo Road Board, Reporoa Railway League and Ngongotaha Guthrie & Waikatapu Settlers Assocs. Branch of Farmers Union), asked the Government to classify the land as to suitability and establish a committee or Board representing interested Government Departments together with one or two local farmers to report upon the whole question of settlement and afforestation."⁴⁸ Outside groups including the New Zealand Farmers Union and the New Zealand Land Settlement and Development League began to seek similar classifications while the staunch supporters of pumice land development among the newspapers particularly continued to press the regions claims. All political parties became aware of the question of land settlement and the Reform party as well as Sir Joseph Ward's United Party carried plans for pumice land development in their manifestos.

Following the election, action initiated by the Putaruru Conference⁴⁹, when they invited eight of the new M.P.s to see the district for themselves, kept the question in the lime light. New Minister of Lands, George Forbes called a conference of the Commissioners of Crown Lands to discuss policy. As a result of this Conference a committee was established to provide legislation for the development of Crown Lands and the question of financing such development.⁵⁰

E.A. Ransom, long protagonist of pumice land development and new minister of Public Works, follow

ment and new Minister of Public Works, followed by another long time supporter of the district Native Minister Ngata visited the pumice land area prior to G. Forbes. Following an extensive tour of those lands Forbes, who was also Minister of Agriculture, ordered a full report of existing development. A farm survey was carried out in the Tokoroa and Rotorua districts which did not lead to a very favourable opinion of pumice land as a dairying proposition but advocated that a block of such land be developed as an unemployment measure.⁵¹ Also in the same year A. Leigh Hunt organised a large scale conference at Wellington of the N.Z. Land Settlement and Development League to which came representatives of a large number of local bodies or other national or local organisations. Within the remits passed were a number advocating pumice land development. Yet another scheme dealing with the pumice lands was the Boys on Farms scheme advocated by the Farmers Union and passed by their conference in 1929.⁵² That year saw also, in the report on the petition seeking the Government to review their decision to cease work on the Rotorua to Taupo railway a recommendation that "the Government should consider the putting into operation of an exhaustive experimental test on say ten thousand acres of the better class of pumice land to be brought into permanent pasture on the principle of mass employment"⁵³ while the Labour Party conference established a committee to investigate the possibil-

ities of settling the pumice lands.

These then are some of the background under currents which were reflected in the debates on the Land Laws Amendment Act of 1929 and also some of the reasons why the provisions of that Act were carried out on the pumice lands.

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CHAPTER FOUR: APPRAISAL, SELECTION, DEVELOPMENT SETTLEMENT

1930 - 1939

"One of the causes of unemployment is that land settlement has not kept pace with the increase in population" ¹. Herein lies one of the major stimuli for both the reevaluation of the pumice lands noted in the previous chapter as well as associated agitation for a more vigorous land policy. Other considerations which weighed heavily on these policies were a widespread fear of the consequences of the drift to the towns, feelings that New Zealand's economic well being depended upon expanding primary production together with the need to provide employment for those without work. Of the pumice lands the consensus of opinion within the House can be summed up in this statement by Member for Patea, Richie, when he said "if we are going to develop our pumice country we will have to make up our minds to lose a considerable sum of money" ². Not all held such a gloomy picture however with United Party members Clinkard (an original Mamaku settler), Ransom and Ngata believing that "anyone who goes through the pumice country with understanding and more especially with an appreciation of what science is doing now in the investigation of the class of country, must seriously review his estimate of the extent of that country that is available for settlement." ³.

The Land Laws Amendment Act of 1929 besides providing 5 million pounds for development of land established a three tier system with regard to the assessment, instigation and overseeing of development in specific areas.

At the grass roots level local advisory committees of two local farmers and the appropriate Commissioner of Crown Lands were established. Consisting of H.M.Martin, W.J. Parsons and K.M. Graham (Commissioner) the South Auckland No 2 Advisory Committee, coopted late in November 1929, dealt with the pumice lands of the Volcanic Plateau. The duties of this committee were "to inspect all Crown Lands in its area with a view to advising what particular areas are suitable for settlement.

a) Whether such lands should be partially developed by the Crown prior to offering same for selection or

b) Whether such lands should be subdivided and roaded by the Crown and thereafter offered for selection with the assurance that the advances would be made out of the Land Development Fund to approved settlers to enable them to make improvements themselves. Such advances were to be 90% of the value of the potential improvements and not exceed 1250 pounds to any one selectee.

c) To advise generally its opinion as to how development should proceed and to express its opinion of the minimum and maximum areas of proposed sections into which the block under report might be subdivided. Particular attention to be paid to water supply, noxious weeds etc.

d) Generally report on any particular matter referred to it by the Land Development Board" 4

The Land Development Board consisting of the Minister of Lands, Undersecretary for Lands, Permanent heads of the Agriculture and Treasury Departments, the principal accounting officer in the Department of Lands and Survey and the Superintendent of the State Advances Office along with Wanganui farmer J.R. Franklin, made up the second tier. Working on the reports from the Advisory committees and officers of the Lands Department the function of the Board was "to consider the general policy of the settlement of the undeveloped lands of this Dominion" ⁵ Once a particular area had been considered and a recommendation made by the Board all the requisite finance had to be approved by cabinet which then completed the third tier.

The Tirohangablock provides an example of how the system worked in practice. Brought to the notice of the Board by C.H. Clinkard (M.P. for Rotorua) and the Putaruru Chamber of Commerce this 13,000 acre block, on the southern banks of the Waikato River within half a mile of the Taupo Totara Timber Company's line and six miles from Atiamuri on the road to Mokal, was the subject of a report by Martin and Parsons in October 1930 "We estimate 75% of this area is available for subdivision into dairy farms of from 100 - 500 acres. The soil generally is of a fair quality carrying a growth of fern, tutu, teatro and tussock and is fairly well watered by streams and springs. We are of the opinion that this block should be roaded and partially developed by the Crown before offering for

selection. A large portion of the block could be put into permanent pasture off the first furrow" ⁶. After noting the coarseness of the soil in a report a month later B.C, Aston warned of the likelihood of cattle sickness on the block. K.M. Graham after endorsing the need to discover if that was in fact the case before development work began went on to say "While in appearance the block is suitable for settlement it is actually unsuited for farming in small holdings owing to the lack of both natural fertility of the soil and an adequate water supply" ⁷ Furthermore "the prospective overhead costs of production contingent on its isolated position" ⁸ was a further point against it.

In light of these opinions the Land Development Board shelved the matter pending further information. No settlement was to occur on this block until after World War II as a result

A further area of 20,000 acres north of Lake Rotoma, indicated as "not suitable for development or settlement purposes as a whole" ⁹ although 400 acres were felt to warrant a further examination at a later date is the only other area where development was not advised. (In this regard it should be noted that all such files of the South Auckland No 2 Advisory Committee appear to have been destroyed or lost.)

Before considering those blocks on which development was carried out, namely Ngakuru, Galatea and Onepu some comment on the ongoing study of bush sickness is necessary in aiding the understanding of the area.

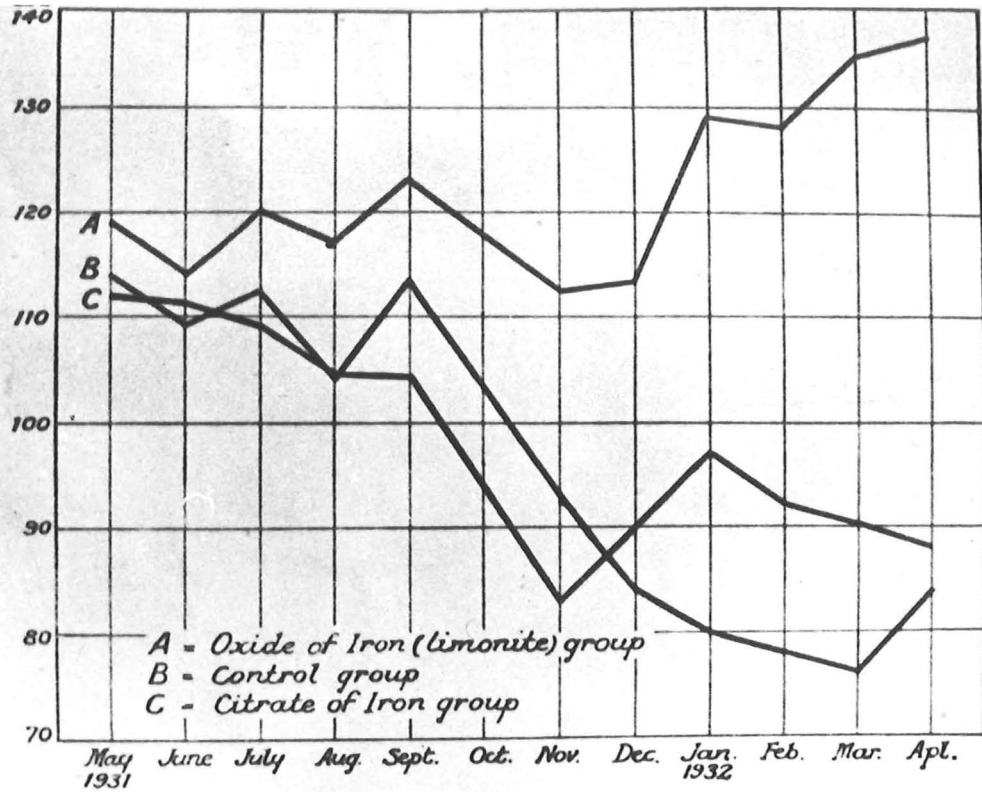
BUSH SICKNESS 1929 - 1939

Aston turning his attention to readily available though insoluble or almost insoluble forms of iron, found in limonite a compound which gave to sheep ample iron to meet their requirements. Limonite mixed with salt and given as a lick proved its worth in field trials at Atiamuri and came into almost universal use after 1931. Meanwhile from 1929 to 1931 the Cawthron Institute, in association with the D.S.I.R. completed a soil survey of the pumice lands as a consequence of which it was shown that the disease was in the main limited to the soils formed from two of the eight volcanic showers - on the Kaharoa and Taupo showers bush sickness was found to be both widespread and acute although as Aston had already noted there were free areas even amongst soils derived from these two showers.

Theodore Rigg of the Cawthron Institute, after re-examining Gilruth's experiment and testing the soil from the Te Kawhata enclosure where the subject sheep were held and finding them fairly rich in iron, put forward the idea that the amount of soil ingested with the pasture was important to stock health. The Cawthron Institute were investigating bush sickness as found at Glenhope in Nelson and Morton Mains in Southland at the time. Rigg tested his theory by drenching Glenhope sheep with soil from the institute grounds finding this quite efficacious as a cure.

Plates: Eight, Nine, Ten, Eleven.

The results of Limonite
Experiments at the Whang-
apoa Station Atiamuri.
(Rotorua Museum).



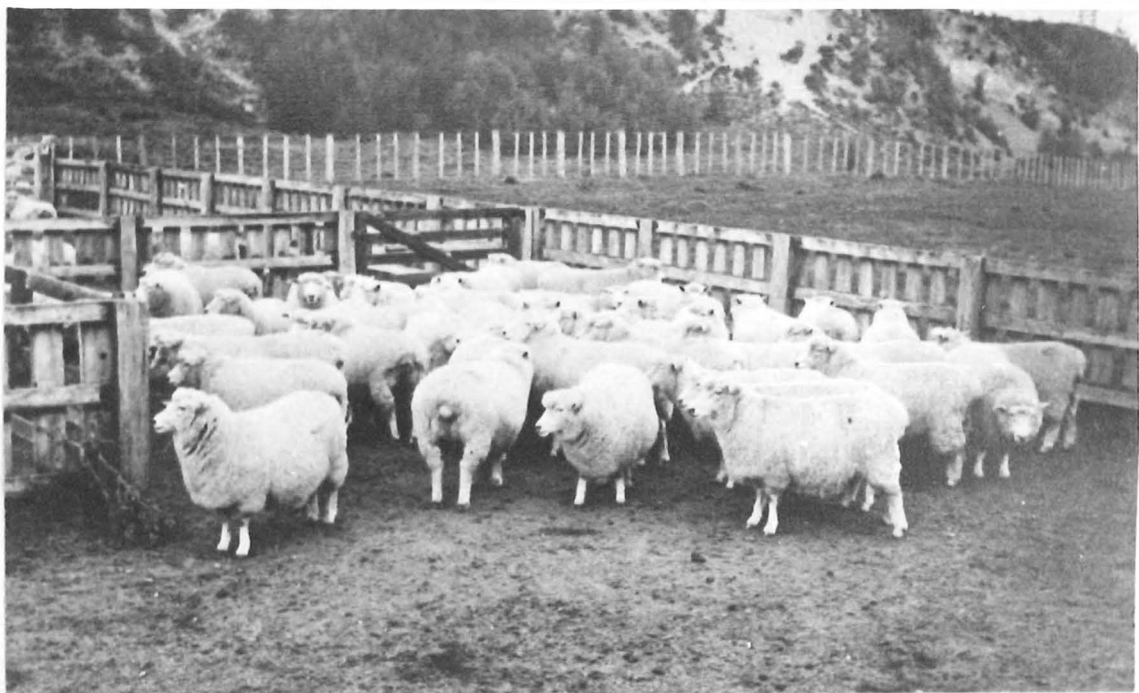
GRAPH SHOWING AVERAGE NET WEIGHTS OF RESPECTIVE GROUPS OF EWES DURING CURRENCY OF ATIAMURI EXPERIMENT.



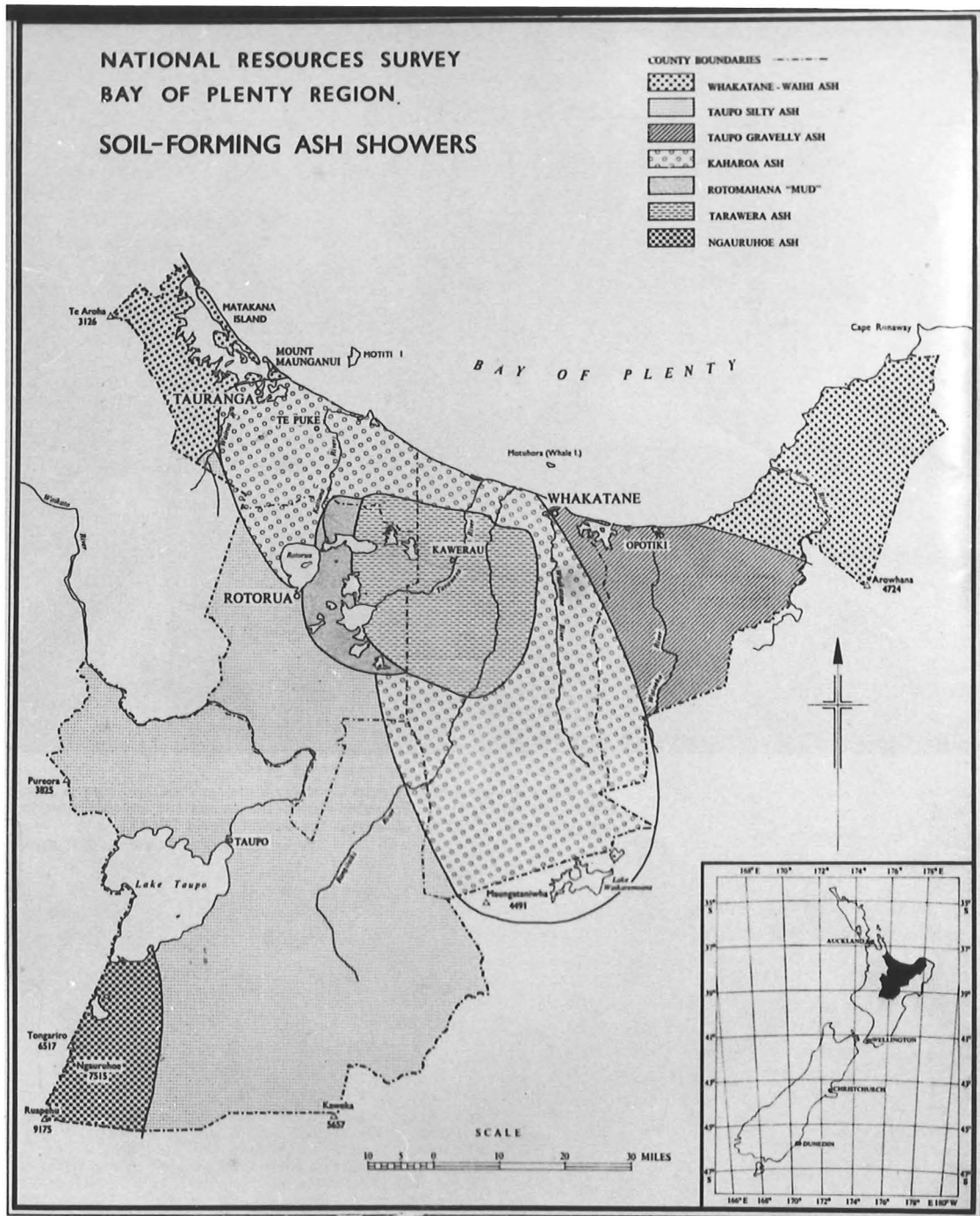
Control Ewes - after 12 months without treatment of any kind - 11 alive out of 50. - 12-4-32



Iron Citrate Ewes - After 11 months treatment
with salt and iron citrate - 17 alive out of 50 -
12-4-52 -



Limonile Ewes - after 11 months treatment
with salt and Limonile - 12-4-52 .



Rigg also held the opinion that the benefits derived from iron amonium citrate, limonite and soil drenches could not be explained by their iron content alone. This view was reinforced in 1934 by the complete failure of some limonites, previously effective, following kiln drying before crushing or deeper quarrying to meet demand for the material. Although the minerals were chemically tested to try and elucidate any change in content no change was shown up in the six or seven ingredients readily detectable by this means.

Soil samples were gathered throughout the country and tested for efficacy as drenches in relieving bush sickness. Samples from Bluff and Otarua in Southland proved the most effective. At the same time note was taken of work proceeding in Western Australia on stock deficiency diseases in the vicinity of Albany. Here Filmer and fellow workers noted that pathological cysts similar to those of bush sickness could be cured by injection of iron compounds from which the iron had been removed. They hinted that cobalt might be the mineral in question and had proved its potency in a series of trials.

As the amount of cobalt was extremely small and its detection extremely difficult samples of efficacious and non efficacious New Zealand soils were sent to England for spectrographic examination, it being possible in this way to detect much smaller quantities of the rarer minerals than was possible by chemical means. In 1936 the report of Hugh Ramage, who undertook the

examination, was received indicating that the merest trace of cobalt and nickle constituted the difference.

Soil samples were gathered in 1936 and 1957 from the pumice lands of the Volcanic Plateau. After analysis had been carried out the reports in 1938 indicated that soils, with less than 0.04 parts per million of cobalt were bush sick while those with more were healthy. Experiments with cobalt as a drench were begun in 1936 led by Pearce and Cox of Puketurua and Lichfield respectively. These two prioneers were also responsible for the idea of incorporating cobalt with superphosphate and using it as a top dressing. Follmwing the successful completion of these trials and the commercial production of cobaltised superphosphate the bogey of bush sickness, at least in the eyes of the farmers, was waylaid by the publication of the results of the investigations in the New Zealand Journal of Agriculture in 1939.

NGAKURU

In October of 1929, prior to the passing of the Land Laws Amendment Act, George Forbes was already seeking the removal of the Education Endowment designation over a 2,200 acre block adjacent to the Guthrie settlement in the Mirinaki Valley. Earlier a group of officers from the Departments of Lands and Agriculture had inspected the area to be known as the Ngakuru No 1 block. One of these men was to write that it was

"sensing something of the feelings of Moses as we surveyed, from a hilltop, the promised land, largely unoccupied and barren looking with brown heath and tussock vegetation in which clumps of tutu stand out as green oasis. We knew by then something of the extent and nature of these fine fringing members of the Taupo pumice shower, that they were capable of supporting pasture with superphosphate topdressings only and that bush sickness was not likely to be a major problem" ¹⁰ Indeed settlers on the nearby Guthrie allotments could point to healthy stock together with the similar condition of feral cattle, remnants of previous herds in the district. The major impetus for the selection of this block other than its frequent inspection (beginning in 1920), were closeness to the Guthrie settlers, who, it was felt, were in need of the assistance work on the block would give them whilst once the Whirinaki Road had been completed, it was relatively close to Rotorua. At its inaugural meeting on November 26, 1929 the Land Development Board authorised the expenditure of 5,000 pounds on this block although cabinet was not to endorse this until the new year and the Local Advisory Committee did not meet Messrs Deem and Smallfield (Agriculture Department) until January of 1930. The purpose of this meeting was "to discuss on the ground the question of the most suitable scheme of subdivision and development of the block" ¹¹ Bearing in mind that both H.M. Martin, who had reported favourably on the

block in 1920 and whose nephew held one of the Guthrie allotments, and W.J. Parsons who farmed nearby and had long advocated the development of these parts it is not surprising they were in accord with the ~~new~~ that the area was suitable for development.

Work began in February of 1930, after instructions were given to endeavour to break in 1000 acres by the following March, with the establishment of a tent village to house the unemployed together with a three roomed cottage for the overseer.

In April of 1930 the South Auckland No 2 Advisory Committee reported on a further 12,000 acres of Crown Land in the neighbourhood of the Guthrie settlement. "We are of the opinion that under a revised scheme of roading and smaller subdivision this Crown land is for the greater part suitable for settlement as it is well watered throughout by springs and streams and the soil is of fair quality". By July 22nd the Land Development Board passed a resolution "That the areas of Crown Land adjoining the Ngakuru block be dealt with as follows,

1. That about half of the area be offered for selection without prior development.

2. That the balance be partly developed by the Crown by grassing approximately 50 acres of each subdivision prior to allotment"¹²

However action was not undertaken as the Agriculture Department held doubts over the value of the area for development.

P.W. Smallfield was to write that the "area is certainly a

very unsatisfactory one for settlement and one can not recommend it as likely to be a financial success; and with our knowledge I cannot recommend its being broken in" The Land Development Board, overruled however and the development of this block was put in hand - known as the Ngakuru No.2 block.

Beginning early in 1931 a further area of 1800 acres, the bulk of which was south of the Ngakuru No 2 block along the Whirinaki stream, became centre of discussion as to its development potential. Although it was initially decided by the Land Development Board to develop it all, considerations of financial stringency caused cabinet to restrict development to an area of 600 acres.

The development of the Ngakuru blocks falls into a number of phases, but at any one time different parts of the total block were in different stages of this process.

The first phase composed the surveying of sections (the initial subdivisions being often radically altered by the time the land was offered for selection), roading, clearing, burning, grassing, the erection of fences and the planting of shelter belts. As development proceeded it became necessary to move the base camp a number of times, which supplemented by subsidiary camps, facilitated further development work more conveniently.

Scrub-cutting and ploughing were at first shared between contract work carried out by the Guthrie settlers, Parsons

McLean and the Hutchings for example and day labour. However, this was replaced fairly early in the development work by a system of cooperative contracts, which were also undertaken on other jobs - fencing in particular. Men in long lines, often fifty to each, cleared the scrub by hand after which the resulting debris was burned and the land ploughed either by horse team or tractor depending upon the steepness of the terrain. Defying common practice which usually saw the establishment of red clover as a temporary pasture to build up soil fertility, followed by a root crop and then permanent pasture, the majority of the cleared land was put in permanent pasture after the first furrow in an attempt to facilitate early settlement. The land was ploughed five inches deep with a mouldboard plough with tail plates to ensure that the furrow was properly turned. Left to fallow until the furrow slices had weathered the land was then consolidated with a Cambridge roller. After double discing, chain harrowing and rerolling a carefully selected grass mixutre was sown in spring or autumn, together with liberal topdressings of superphosphate, and the block rolled once more. Some limited temporary pasture and root crop acreages were sown.

Shelter belt planting was carried out over the winter months, the principal tree being pinus radiata although low shelter of cupressu lawsoniana and cupressa macrocarpa together with Douglas fir and Blue Gums were also utilized. Boundary fencing was also carried out, while one farm was completely developed out of

Plate Twelve, Thirteen:

Unimproved Landscape.

"Sensing something of the feelings of Moses as we surveyed from a hilltop the promised land, largely unoccupied and barren looking with brown heath and tussock vegetation in which clumps of tutu stood out as green oasis."

(R.E.R. Grimmett - Agriculture Department.)

(Sincere thanks is expressed to C.R.Taylor, of Rotorua for supplying the major part of these photographs.)



Plate Fourteen:

The beginnings of development - the unemployment camp on Ngakuru No.1. block.
(Agriculture Dept.)

Plate Fifteen:

Scrub cutting - long lines of men working on the block.
(Rotorua City Museum.)



PLATE SIXTEEN:

C.S. Dalglish surveying the results of a
burn on the Ngakuru block.
(Agriculture Dept.)

PLATE SEVENTEEN:

Ploughing - the continuation of landscape
change.
(Agriculture Dept.)



Plate Eighteen:

Clover pasture on Ngakuru Block - the end of
the initial development phase.
(Agriculture Dept.)

Plate Nineteen:

Run cattle on Galatea Station - the usual
method of consolidating new pasture on these
blocks.
(Agriculture Dept.)



Plate Twenty:

The end result.

Ngakuru Landscape about 1937.

(Agriculture Dept.)



Block one in the very early stages and was ready for dairying in 1931. Used as a demonstration farm this section was provided with the necessary buildings, water reticulation and subdivisional fencing.

The development of the Ngakuru No 2. block was hindered by the tardiness of the Ministry of Public Works in putting in hand the necessary roading work. After the Agriculture Department had made a start on all roads necessary to maintain the impetus of development work the Public Works took over and the formation of Mangatete, Waikite Valley, Totara, Poutakataka and Twists roads was swiftly put in hand.

The second stage, the utilization of the blocks as a farming concern began in April 1931 with the grazing of 52 head of stock belonging to nearby settlers to control young grass. These were augmented in June by stock purchased by the Agriculture Department. In July the first month's butterfat return was recorded from the Ngakuru Demonstration Farm. Early in 1932 urgent consultations were undertaken as to the future development strategy. " The settlement of the area should be viewed as an experiment in order to demonstrate whether under average husbandry it is possible to handle this class of country successfully. If through lack of finance or farming experience the settlers fail in this respect it is impossible to gauge the value of the enterprise. An alternative to the ordinary procedure regarding settlement would be to select the requisite

number of settlers and install them under conditions which would provide for a period of probation and supervision".¹³ This alternative recommendation was accepted and the work put in hand to develop six farms for use as sharefarming properties requiring buildings, water reticulation additional subdivision and topdressing of grassed areas whilst any supplementary feed was to be provided by adjacent unoccupied sections. In 1932 these farms were occupied and a further five were developed for the following year, half in each of the two main blocks. Meanwhile dry stock and incalf heifers were utilized to help maintain and consolidate the new pasture from which hay and ensilage was taken to provide winter feed. Root crops were also sown down on the share farms.

"Original investigation led to a rather pessimistic view of pumice land for dairying suggesting in the early years development of a butterfat production of 50 to 60 lbs. per acre was all that could be expected rising to 100 lbs. after four to five years. However on three year old pastures at Ngakuru returns of 120 to 125 lbs. to the acre are being obtained." ¹⁴

This no doubt provided the stimulus for the opening in 1934 of 21 sections totalling 3245 acres for selection on renewable lease in May. The demand shown for these sections at the ballot was disappointing, attributed to the low price of butterfat and market uncertainties, no sections being allocated. This brought some changes in policy, the chief of which was an attempt to raise fat lambs as an experiment during 1934 along with the

halving of the area of the Demonstration Farm.

The third phase the settlement of the Ngakuru block by other than sharemilkers, began with the selection by K. Lyons Montgomery, previously supervisor of farming operations there, of section 12 Block I Ngongotaha. A further five sections were selected in that year together with two more in the following year. Topdressing work in the maintaining of existing pasture, the increase in the number of breeding ewes to 1500 on the station side marked the continuation of the previous years experiments. Of this latter attempt the results were disappointing with the lambs having to be sold as culls or stores as sickness, aided by the failure of the limonite lick, caused a deterioration in their quality.

1936 saw a full scale review of the properties, an investigation primarily into the subdivisions previously decided on, as a result of which further sections were offered for selection. Eleven sections were taken up in that year and the remaining nine in the next. It was not until 1939 that the 12 sharemilkers acquired the permanent lease of their holdings. Some amalgamations of sections were made with fourteen selectors holding more than one section. In all 37 farms had been established on the block.

It should be noted that apart from the share farms very few of the original sections had more than approximately 100 acres of permanent grass (subject to size), 5 acres of shelter, boundary and some subdivisional fencing and a water supply

either from bore, pump or other means. In addition loans under other provisions of the Land Laws Amendment Act were readily granted to facilitate the provision of dwellings, buildings, topdressing or other improvements deemed necessary for success.

Of the selectors most worked on the development of the block in some capacity, as did the sons of men already share-milking there.

The success of the 13 Guthrie settlers in developing their farms through their own efforts was greatly facilitated by the money that they earned through employment on road making or other development work on the block. Moreover all were granted loans under the provisions of the principal act under discussion also.

GALATEA

Rebuffed at first, the Auckland branch of the Farmers Union succeeded in July of 1930 in pressuring the Government into a re-evaluation of Troutbecks 22,325 acre Galatea Station. Situated at the confluence of the Whirinaki and Rangitaki Rivers (which form its southern and western boundaries), bounded to the east by the ranges of the Urewera country and fenced on its northern boundary from Te Kopua to Te Uru trig this property is . 50 - miles from Rotorua and 35 from Edgecumbe. Of this property the special committee, M.J. Galvin (Field Inspector Lands and Survey Dept.), G.W. Richards, and E.A. Meredith(Outside and District

Valuers) were to say " in our opinion, Galatea affords a rare opportunity for an outstanding achievement in the promotion of land settlement. With the exception of about 600 acres of steep hill country the whole station can be used profitably for dairying; and we are convinced that if properly selected and farmed, that within two years from the date of selection the estate will be carrying 2,000 dairy cows; within four to five years it can be developed to a carrying capacity of 5,000 dairy cows, which can eventually be increased to 10,000 cows" ¹⁵

Although possession was not gained until early in 1932, roading work undertaken by the Public Works Department on the 34 mile Te Teko to Murupara road together with that on the internal Horomanga, Haumer, Mangamatu, Taranui and Whirinaki roads along with their fencing was undertaken. While mismanagement had marked the stations life it was still very much of a going concern with but 6,000 acres in manuka and native grasses remaining in its natural state. Unlike Ngakuru it was not a virgin landscape. Thus the Agriculture Department was faced with the continuation of the area as a station until sufficient dairy pasture could be established to allow for subdivision.

During the period immediately following the take over of the estate scrub cutting, drainage operations, grassing, shelter-belt planting and fencing went on apace. With the exception of the shelter belts, three of which were put in traversing

the area from east to west, the period to 1934 saw all development work including the establishment of root crops and a demonstration farm on the southern portion of the block. Late in 1933 the rosy picture changed with the onset of a prolonged dry spell, accompanied by very hot winds, which drastically affected grass growth causing numerous investigations early in the new year and a curtailment of development. The only areas sown in grass in the following year were those which had previously been in root crops. Whilst the Agriculture Department, P.W. Smallfield in particular, were very pessimistic Galvin was to write "Although not laying claim to any scientific knowledge, my practical experience convinces me that there is no question of the success of pasture establishment on this estate provided the control is practically handled" ¹⁶ This year marks the beginning of the general parting of the ways between these two Departments culminating with the withdrawal of the Agriculture Department from development work at the completion of the next season.

In 1934 - 35 the notable development was the establishment of 10 share milking farms, comprising cottages, sheds, yards, piggeries, water supplies, milking machines and general equipment. The gravitational water supply for 6,000 acres was completed to about 100 concrete troughs whilst progress in draining, roading, scrub cutting, fencing and shelterbelf planting was carried out. With the 600 acres sown in permanent

grass the bulk of the rest, 4500 acres, was topdressed and harrowed along with the establishment of root and grain crops for station requirements.

December 17, 1935 marks another moment of truth in the development of the Galatea settlement with the visit of the Minister of Lands to the block. As a result of the visit, together with the discussions held, it was recommended that development work be fastened, aiming at the grassing of about 4,000 acres per annum. No more houses were to be built in the meantime, whilst the share milkers were to be given the option of permanent lease arrangements over their farms following the 1936 - 37 season. It was also proposed to open recommended sections, excluding the Demonstration farm.

Consequently 22 sections (1777 acres) were opened for selection prior to the 1936 - 37 season 16 of which were disposed of on renewable lease. In the following year a further 3 allotments were taken up. Thus Galatea moved, somewhat belatedly, into the third phase of development.

Development work, along with the maintenance of existing pasture, over the next three years built up momentum as large areas were stumped, burnt and ploughed in readiness for root crops or permanent grass. Although 2808 acres were grassed during 1937 - 38 a lesser area was so developed in the following season. Meanwhile the top dressing of established pasture, the extension of water reticulation, fencing, clearing and plantation

development continued. Station operations were likewise maintained as dry and breeding stock consolidated the pasture whilst the 10 sharemilking farms also continued in operation. Protracted discussions continued throughout the latter part of the period on the best terms to be offered to convert the latter holdings to leasehold arrangements.

Following on a hard winter in 1938, a winter in which station root and fodder crop reserves were severely depleted, came a renewal of the dry spell experienced in 1934. Extensive aid in the form of loans to bring in hay and other fodder crops were granted but the situation continued to deteriorate. "After three years of trying to make the land pay we are at the end of our tether. After three years of constant labour, six of the settlers are ready to leave, and the rest of us certainly see nothing in continuing under present conditions. Exceptional hardships had followed two bad seasons - the facial excema epidemic, the dry summer and other circumstances resulting in losses of stock and a marked deterioration of the pasture. With the English grasses burned out, and only sweet vernal, treefoil, and danthonia remaining, lucerne was being planted, but it would be two years before it would be ready, and the settlers are wondering how they could make a living in the meantime" ¹⁷ The returns from the 100 acre holdings were said to be not enough to cover costs whilst the sharemilkers were said to have had the benefit of extra facilities which provided a rosier outlook at the beginning

than could be met. Nonetheless even the sharemilkers had their problems as only six of the originals remained. But all of these remained enthusiastic for the eventual success of the settlement.

The Lands and Survey Department retained an optimistic view but noted the following as the essentials of success:-

- (1) adequate topdressing at the correct period, at least 2 cwt each spring and autumn
- (2) up to 10 acres of lucerne properly cared for
- (3) an area of five acres in swedes and turnips each year.
- (4) Good quality dairy stock not exceeding 40 cows to 100 acres of pasture. These not being carried out in all cases.

"In view of the large areas still to be settled at Galatea the position should not be allowed to deteriorate and early action - loans especially - appears to be necessary yet the Estate has come through a severe testing period remarkably well. It has been demonstrated clearly that where farming methods have been sound, the fall in production has not been serious, and further the set back to pastures has not been permanent or irremediable " 18

ONEPU

"Please advise immediately largest block your district you

consider development under Departmental management exclusively can be undertaken".¹⁹ Thus ran a telegram to the Commissioner of Crown Lands Auckland in 1930 and thus it came about that the development of the Onepu block of 2446 acres straddling the Rotorua - Te Teko road, to the west of the latter along the banks of the Tarawera river was undertaken. Truncated by the transfer of a portion to the Small Farms Board this block provides an interesting contrast with Ngakuru and Galatea, although like the latter it was part of the "black desert". It was unnecessary to instruct the Local Advisory committee to supply a report especially as it had already both inspected and reported on the area in the previous month as had Chief Drainage engineer Macmorran.

Following Land Development Board and Cabinet approval of 1930 work got underway on this block in December. "Flat land, light Tarawera ash, overlain in the lower portion with a thin layer of river silt the lighter, drier areas of which are covered in short manuka, with scattered heavier stands, "wrote Smallfield" The moister and better soils carry heavier manuka and tea tree"²⁰ he continued. By June of the following year 9 sections ranging from 74 to 142 acres had been subdivided on the northern part whilst a beginning had been made on the southern portion. Drainage operations were almost complete by then also whilst 358 acres had been sown in grass. The majority of the land after being cleared by hand or by mower, the debris burnt, was run over with Whakatane harrows before sowing, the seed covered with

a brush harrow. Some of the heavier lands were treated in a similar manner to the other blocks following the use of a swamp plough. Superphosphate with ammonium was used extensively on this block.

May 1932 saw 1553 acres cleared of scrub of which 1056 had been put in new grass. After boundary fencing had been completed yearling heifers plus a number of bulls, to be the basis of the herds of incoming settlers, were run in numbers reaching over 200 from September of 1931. That month saw the Commissioner of Crown Lands signify that four sections were suitable for disposal. The whole grassed area was topdressed at the rate of 2cwt to the acre and a small pipe well complete with small windmill put on one of the other sections being developed.

Moving rapidly into the third stage this block saw no share milking or demonstration farms as the first four sections were balloted in July 1932. Ranging from 74 to 119 acres these sections totalling 371 acres brought a surfeit of applications, fifty in each case. However the largest number allowed on any one ballot was 27. Five more sections were balloted before the remainder of the block was handed over to the Small Farms Board for future development and settlement.

This block shows a more rapid path from the beginning of development to settlement under renewable lease than the other two, the grassing operations, conditioned in part by the lighter soil, were also different as was the grass mixture. No buildings

were provided on the block although as with the other two, loans were provided under the auspices of the Land Laws Amendment Act of 1929 to facilitate the building of these. The absence of either Demonstration or share farms can probably be explained by the fact that nearby areas were already well developed - principally the Rangitaiki swampland - although the Onepu area itself had been left vacant, untouched for years. The Onepu settlement showed all the signs of prospering during the years to the end of the decade with a profit over expenditure being recorded very early in the piece.

Thus 9 farms were added to the pumice lands of the Volcanic Plateau to add to those already discussed. Before closing this chapter it is proposed to point the way, back to the theme of the earlier chapters, to the ongoing perception of the pumice lands of the Volcanic Plateau.

PERCEPTION

There are indications that by the late 1930's the perception of the area's agricultural potential was once more on the upward grade. However Galatea and Onepu were in the war years to tend to substitute the term drought for bush sickness "It was the worst investment I ever made ".²¹ was the way Dr McMeekan described his investment in a Galatea block. He also went on to say " in my opinion it was Galatea that gave the pumice lands it bad name".²² "Onepu has long been considered the problem of this district as far as farming is concerned and it will become the Government which was responsible for settling it when its previous history was known to all who understood the "plains".

Unless some definite action is taken to relieve the situation there is every prospect of this district seeing afresh the melancholy picture of deserted farms and people walking off" ²³ In 1946 the then Director General of Agriculture was to term the Volcanic Plateau a potential rather than an actual Agricultural region.

Nonetheless there were some manifestations of a change in view coming forth. Seeking to acquire a dispensation to place some more pumice under trees New Zealand Perpetual Forests were to write that the Whakamaru Mangaiti land it sought was "the well known poor pumice of the Tokorou Taupo district subject to stock sickness." ²⁴ Two years later in seeking further such areas afforestation companies were apt to present the Agriculture Department with a fait accompli by planting the trees first and asking permission afterward. Within the district there was said to be an upsurge in confidence following the discovery of limonite, an upsurge which manifest itself in the buying up of blocks of Matarawa estate for example. A similar condition is said to have followed the discovery of cobalt deficiency. The Galatea estate and J. Grants adjacent property provide some indication that there was an upsurge in belief in the agricultural potential of these lands as shown in increased valuations for unimproved land. Table two provides figures which show a very dramatic increase in the unimproved value of Galatea estate between the time it was taken up and the period partway through its development whilst Grant's property shows a slight

Table Two; Comparison of Unimproved Values

Galatea and Adjacent J. Grant Property
at purchase and at March 1937

(a) As at date of purchase of Galatea.

<u>Date</u> <u>Valuation</u>	<u>Property</u>	<u>Area</u> a.	<u>Value</u>	<u>Approx. Value</u> <u>per Acre.</u>
31/3/14	Part Galatea Estate	3396 0.00	£1,630. 0. 0	9. 6
31/3/25	"	<u>19162 3 27</u>	<u>£18,957. 0. 0</u>	<u>19. 9</u>
		<u>22558 3 27</u>	<u>£20,587.0. 0</u>	<u>18. 0</u>
31/3/25	Part J. Grant's Property	3532 2 11.6	£3,536.0. 0	11.0. 0
2/4/28	Balance J. Grant's Property.	<u>1345 1 36.4</u>	<u>£1,006.0. 0</u>	<u>15.0</u>
		<u>4878 0 08.</u>	<u>£4,542.0. 0</u>	<u>18.6</u>

(b) Present Valuation

31/3/37	Galatea Estate	19622 1 26.57	£55,986.0.0	2.17.0
31/3/37	J. Grant's Property	4878 0 08	£6,435,0.0	1. 6.5

though significant increase. In addition 1946 saw an increase in the Agricultural Journals such as the N.Z. Journal of Agriculture, The Dairy Exporter whilst other newspapers ran articles on the modern miracle of land development in the region.

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CHAPTER FIVE: CONCLUSION

The first aim of this thesis has been to describe and if possible account for the sequence of attitudes to and appraisals of the pumice lands of the Volcanic Plateau to 1930, and to attempt to elucidate the timing, provisions and utilization of the Land Laws Amendment Act of 1929 in the development of areas within those lands.

The period of initial perception of the environment, lasting from 1820 - 1914, saw the build up of a store of knowledge on the area from grassing and afforestation experiments, and the inroads of private agricultural development on either native leased or alienated land or crown leases. In this way the region became synonymous with bush sickness from 1897 onwards, a spectre which was to haunt the region for the next four decades. The period from 1914 - 1922 can be said to have been one of re-evaluation, the results of which were to remain substantially effective to 1930. During this period it was believed by the official bodies concerned, the Lands and Agriculture Departments as well as the Government of the time, that cheap transit of manure and stock products together with large expenditure of capital by the state would be necessary if settlement was to be successful. In addition it was recognised that the area was excellent for growing exotic softwood trees, a shortage of which class of timber was being extensively reported at the time. Provision for the borrowing of 1 million pounds in any one financial year for agricultural development on the pumice lands

was provided in legislation reenacting the Homestead provisions passed in 1919. By this Act it was recognised that the pumice lands possessed no inherent natural value the only value arising from improvements made by man. Financial stringency shelved that measure but further experiments were carried out on the pumice lands with the settlement of Returned Soldiers at Reporoa, Rotorua and Tirohanga and with private developments undertaken at Tokoroa and Rotorua providing renewed evidence that the conclusions reached in 1914 - 22 were true.

As was the first re-evaluation resulting from the exceptional circumstance of returned soldier settlement, so too the second resulted from external circumstances. Forced to find work for the large number of unemployed the state turned first to afforestation and then to land development. A small settlement scheme was begun at Guthrie under the Homestead Act in 1927, a beginning was made on the Rotorua to Taupo railway in 1928, rescinded with a change of Government in 1929, and finally the Land Laws Amendment Act of 1929 was passed. Bearing a marked resemblance to a scheme rejected by Sir Apirana Ngata in a private members bill in 1919 this Act established a Land Development Board together with local advisory committees to initiate land development.

Throughout the twentieth century there were men like E.E. Vaile, the best known though certainly no lone voice in the wilderness as which he was often depicted, K.S. Cox, W.J. Parsons and the Martin brothers and bodies like the Tokoroa Progress League, Waiotapu and Guthrie Settlers Association, Rotorua and Matamata county local bodies who pressed their case for pumice

land development vigorously. In all some five Royal Commissions or Select committees of Parliament held major investigations into the area between 1911 and 1929 whilst lesser ones were carried out almost annually by ministerial delegations, petitions committees or other such deputations. Prominent newspapers and weeklies, notably the New Zealand Herald and the Auckland Weekly news together with local papers such as the Putaruru Press supported a movement which was to blossom with the rise in unemployment, the spectre of a depopulated rural countryside and a feeling that increased rural settlement and primary production was necessary for the country to remain economically viable. During 1928 the hard core of local support, now formed into the Rotorua - Taupo Progress League and the Putaruru Conference gained a wider support base with the swing to their support of national bodies including the New Zealand Land Settlement and Development League together with the New Zealand Farmers Union. Nevertheless other groups notably the private afforestation companies continued to brand the area as bush sick, useless for all but trees, rabbit to the acre country.

The second aim of the thesis to describe the resultant reappraisal, selection, development and settlement at Onepu, Galatea and Ngakuru attempted to relate the real with the perceived environment in the working out of the provisions of the act on the land.

At Ngakuru and Onepu (during this period) development proceeded smoothly with few major problems. Whilst the general form of

development showed three phases, development (ie grassing, fencing etc), share farming and bona fide settlement that at Onepu went from the first to the third with only a short second phase with no share or demonstration farms and only a few young heifers to maintain pasture whilst the settlement of allotments was awaited. Galatea reveals a basic understanding of the real environment as periods of drought in 1933 - 34 and from 1938 either curtailed development operations or placed severe handicaps on settlers who had taken up leases. The size of holdings, predominantly 100 acre lots was already beginning to prove too small to be economic in the locality.

Overall this thesis concentrated on the period in which state development of land really began, an understanding of which is essential, before the reevaluation which followed the Second World War and its associated soldier rehabilitation can properly be put in perspective. While both Ward and Campbell have described that aspect they along with others have in a sense run before they could walk in that to a major degree they have both glossed over this period, the problems of which had a large bearing on subsequent development.

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<u>Reporoa Settlement Sec 45S, 60S, 71S</u>	26/20790
<u>Reporoa Settlement Sec 59S</u>	26/17309
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b. Held at Head Office (Wellington)

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<u>Minutes of Conference of Commissioners of Crown Lands 1913, 1919, 1929</u>	
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<u>Reporoa Vols 1 - 7</u>	4/46
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7. Taupo Totara Timber Company (Putaruru)

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- North Riding 1911, 1921, 1929

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